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SCANDINAVIAN MONOGRAPHS

VOLUME I

THE VOYAGES OF THE NORSEMEN TO AMERICA

ESTABLISHED BY NIELS POULSON

THE VOYAGES OF THE NORSEMEN TO AMERICA

BY

WILLIAM HOVGAARD

LATE COMMANDER IN THE ROYAL DANISH NAVY

PROFESSOR OF NAVAL DESIGN AND CONSTRUCTION IN THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

WITH EIGHTY-THREE ILLUSTRATIONS AND SEVEN MAPS

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PREFACE

THE original material on which our knowledge of the Vinland voyages is based is of very limited extent. Every term and sentence in the sagas which has any bearing on these voyages has been carefully examined and discussed. All evidence that has come to light, whether in Europe or in America, has been scrutinized by competent critics. It might, indeed, seem that the whole field had been covered, and that the last word on the problems involved had been said. I found, however, after having studied the more important works on the subject, that justice had not been done to it from the point of view of the navigator. When this book was planned, no work existed which gave a comprehensive presentation of the means and methods of navigation possessed by the Norsemen, and of the bearing of these features on the question of the discovery of America. Dr. Nansen's book, *In Northern Mists*, which was published while the present volume was in preparation, dealt rather fully with this aspect of the matter, but did not contain any description or illustrations of the coasts of America likely to have been visited by the Norsemen.

After having been interested in the subject for a long time, I decided about four years ago to study it

more seriously and to write an article about it, dealing especially with the navigation and allied matters. I soon found that, in order to make the essay useful to the general public, it was necessary to embody in it, not only an abstract of the sagas themselves, but also a great deal of introductory and accessory matter giving an insight into the history, life, and character of the Norsemen. Thus the article grew to a pamphlet. Further study showed me that even eminent authorities differed on important historical and geographical questions relating to the voyages. I was thus led to an inquiry into the controversial points, comprising an analysis of the saga accounts, the result of which I decided to include in the work. This required the addition of several chapters, and the pamphlet grew to a book.

Some may judge that I have gone beyond my capacity as a naval man, for I have indeed trespassed on the territory of the historian, the ethnologist, and the botanist. It will perhaps be admitted, however, that after specialists have performed the technical task of bringing together and presenting the facts that bear on vexed questions, a verdict can well be given by a layman, provided it is based on a careful study of the available material.

It has been my aim to place the sources of infor-

mation as objectively as possible before the reader, and to state the arguments for and against each question in an impartial manner. My conclusions in many cases take the form of alternatives, a natural consequence of the analytical treatment, but I have always indicated what I consider as the most probable solution. This mode of treatment has also necessitated many repetitions, especially of statements of the sagas, but it is believed that this drawback is more than compensated for by the greater facility with which the reader is enabled to weigh the evidence and to follow the arguments.

I am indebted to Professor William H. Schofield for his assistance in the preparation of the volume as to literary form, as well as for several valuable suggestions, and to Professor Finnur Jónsson for aid in the interpretation of various points in the Icelandic text of the sagas and certain matters of history. My thanks are due also to Vice-Admiral C. F. Wandel, Chairman of the Danish Greenland Committee, for his permission to reproduce the numerous illustrations from *Meddelelser om Grönland* which appear in this work.

WILLIAM HOVGAARD

Boston, May, 1914

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INTRODUCTION

THE records of the Vinland voyages as found in the sagas have come to us, like the sagas themselves, in a somewhat peculiar way. Perhaps through several generations the original accounts were transmitted orally before they were finally written down. This mode of transmission is not unlike the reflecting of an image from mirror to mirror until it is fixed on a photographic plate. In such a process the image gradually loses in distinctness, becomes blurred and distorted, and assumes new characteristics and color. The camera itself may be imperfect, or separate images may reach the same plate successively, producing a superposed and confused result, which the photographer may try to render intelligible by retouching. In other cases a single object or scene, viewed from different sides, may look so dissimilar that the images reaching the camera may seem to be of different origin. Sagas likewise, when reflected from mind to mind, may lose in accuracy and be changed and colored by the ignorance, the superstition, the carelessness, or the fancy of the saga-tellers. Tales of events resembling one another, as for instance different voyages to the same place, may be thought to relate to one and the same event; a process of merging and superposition takes place, and a writer is tempted to render his version more intelligible by altering or omitting various facts. The same event may also be seen differently by different people, each having his own point of view, prejudices, and interests, and thus diverging and even contradictory versions may be produced. We must, therefore, in a critical examination of saga-records, make due allowance for such sources of error.

Great weight has been attached by some to the age of the sagas, and it has been presumed that the older have greater historic value than the younger. This, however, appears contrary to the generally accepted opinion that history cannot be written satisfactorily till after the lapse of one or more generations, not only because the records may not always be available immediately, but also because the true perspective of the events cannot be obtained till some time after their occurrence, and because the opinion of the contemporaneous historian is liable to be biased and influenced in other ways. Another ground on which the validity of the sagas has been attacked is that they contain several tales as well as isolated statements that are obviously based on fables or myths. This is a feature to be expected in records from those superstitious times, especially in accounts of voyages to distant lands. The existence of such fictions and mythical elements does not wholly invalidate accounts which are otherwise sober, objective, and realistic; in some cases they may even shroud a valuable and interesting truth which can be unveiled by research. Finally, the oral transmission to which the sagas were subjected has been used as a ground for attack. Yet, in spite of the fact that this transmission in many cases extended over long periods of time and took place through several persons, it was on the whole remarkably accurate. The Icelanders had extraordinary memories, which were often aided by compositions in verse, and the art of saga-telling reached an exceedingly high standard. Oral transmission did not, therefore, necessarily affect the accuracy of the records to any great extent. On the other hand, it has steadily been overlooked that at the time of the Norse colony in Greenland true believers were strongly prejudiced

against heathens in general and in particular against heathen natives, who were considered as little better than animals or else as supernatural beings, "trolls," with whom no intercourse was allowed by the Church. This undoubtedly in some cases influenced the accounts in the sagas, and may have led to the suppression of important facts.

These introductory remarks may appear to be elementary, but they present guiding principles and views which it is desirable to state clearly and to emphasize at the outset, since they form the basis of the following discussion and give the clue to the proposed solution. The little chapter of the world's history here treated has been the occasion of many books and articles, but unfortunately a great part of this literature is without scientific value, being of an amateurish or popular nature. Theories that were the product of little work and much fancy have in several cases attained a certain authority, and it has taken much time and labor for historians to disprove them. The effect on the public has been, in general, to obscure the subject, and to create a distrust of the entire account of these voyages. A problem like the present, which touches a number of different sciences — history, ethnography, botany, zoölogy, navigation, etc. — requires for its elucidation the coöperation of men from all these various fields. Of late several serious investigations have been made and published, that will be extensively referred to and discussed in this book. Still, the author believes, sufficient attention has not been paid to the peculiar conditions under which the navigation of the Norsemen took place. For a full understanding of the accounts of the sagas it is necessary to keep in view both the shortcomings and the advantages under which the Norsemen labored as seamen and navi-

gators. The present work comprises, therefore, a study of the material at their disposal, and their proficiency in seamanship and navigation. It is essential, moreover, to study carefully the geography as well as the hydrographic and climatic conditions of the coasts of America which the Norsemen are likely to have visited. We must, in particular, try to form a mental picture of how these coasts would appear to the exploring navigator, their aspect as seen from the sea, their general character, the existence of bays and harbors, and their animal and plant life. The geographical chapter is written with this object in view, and is accompanied by a number of pictures showing the appearance of the coasts and fiords. These pictures form a most important supplement to the description, being a feature which, to the author's knowledge, has not been embodied in any previous volume.

After the accounts of the Vinland voyages had been almost forgotten for several hundred years, they were again brought to light at the beginning of the seventeenth century. General attention was not, however, drawn to the discoveries of the Norsemen till Torfæus published his book on Vinland in 1705.* When, in 1837, Rafn's *Antiquitates Americanæ* appeared, it was the most complete work on the subject, and the first to contain in print the complete text of the sagas relating to the discoveries. Torfæus and Rafn, as well as other writers during this period, based their accounts on the version found in the so-called *Flatey Book*, where it occurs under the name of *Grænlendinga þáttr*. The authority of this version stood unchallenged until Dr. Gudbrand Vigfusson, and later Dr. Gustav Storm, took up the matter and

* *Historia Vinlandiæ Antiquæ*, Copenhagen, 1705.

gave as their opinion that another version, presumably older, contained in the *Saga of Eric the Red* (often erroneously referred to as *Thorfinn Karlsefni's Saga*), was more logical and reliable than the *Grænlendinga þáttr*. Dr. Storm even maintained that this latter version was entirely untrustworthy, and his opinion has since been generally accepted by historians. Thus it came about that the version in the *Flatey Book*, which formerly had such a high reputation, has of late been discredited. Recently, another great authority, Dr. Fridtjof Nansen, has stated as his opinion that both the aforesaid accounts are unhistoric and little better than realistic novels.

We shall here attempt to show that such sweeping conclusions are not justified in the present case, and that both accounts, in spite of their obvious shortcomings, may probably be considered as essentially historic and essentially of equal value. This statement refers in particular to the description of the voyages, considered apart from the framework of names, genealogy, and chronology into which they are set. In order that the reader may be able to form an opinion of the historic value of the saga accounts, and of the relative weight which should be given to their evidence, he should be acquainted with the economic conditions and the political events which led to the settlement of Iceland and Greenland, and finally, as an almost unavoidable sequel, to the discovery of the American continent. He will then realize that this event was a natural, although an extreme, link in the expansive, westward movement of the Scandinavian peoples. He should, moreover, be acquainted with the character of the Norsemen, their life and institutions, and with the geographical and climatic conditions of Iceland and

Greenland, whence these expeditions set forth. In the chapters on Iceland and Greenland a brief synopsis is, therefore, given of these subjects, comprising a description of the houses, implements, and mode of living of the Norsemen, which will be of particular interest to those who may search for or investigate possible traces left by these early explorers on the coasts of America. The plans of houses and the pictures of implements and utensils from the old Norse colony in Greenland, which accompany Chapter II, are given with this particular object in view.

The chapters containing the geographical analysis and the reconstruction of the voyages form in a sense the conclusion and summary of all the foregoing chapters. It is shown that in all probability the voyages of Leif and Thorvald, as described in the *Grænlendinga þáttr*, extended much farther south than the expedition of Karlsefni, described most fully in the *Saga of Eric the Red*. By an intermingling of the two main accounts has arisen the confusion that has caused so much difficulty to students of this problem.

A comparison between the old Norse game *knattleikr* and the Canadian game *lacrosse* is reserved for the Appendix, because the result of this discussion has no bearing on the details of the geographical and historical analysis of the voyages.

The generic term "Norsemen" is here used to mean either Greenlanders, Icelanders, or Norwegians, wherever it is not desired to specify the nationality of these peoples. The term "Vinland" is used in preference to the more common term "Wineland," because the latter implies a precise meaning of the word *Vin*, and a feature of the land which it is not desirable to assume at the start.

The following abbreviations will frequently be found: *Gþ: Grælendinga þáttr* (Tale of the Greenlanders); *ER: Eireks Saga Rauða* (Saga of Eric the Red); *FB: Flatey Book; GHM: Grönlands Historiske Mindesmærker; MG: Meddelelser om Grönland; AM: Arnamagnæan Collection.*

24°
20°
16°
12°
66°
64°
C. North
Strandir
Skagafiord
Eyjafiord
C. Langaness
West fiords
Huna
flói
Hofsós
Hunafjördr
Hópsós
Flatey
Breidifiord
Thorsness
Helgafell
ICELAND
Snæfellsness
Borgarfiord
Faxaflói
Thingvellir
Skálholt
Hekla
Eyrarbakki
C. Reykjaness
Grindavik
Litharend
Eyjafjallajökul
Westmannaeyjar
Hjörleifshöfdi
Ingolfshöfdi
Eystra-Horn
Vestra-Horn
20° W f Grw

CHAPTER I

ICELAND AND THE EARLY HISTORY AND LIFE OF THE ICELANDERS

ICELAND extends from about lat. 63° to the Arctic Circle and is a roundish island about one-fourth greater than Ireland. Its interior consists mainly of a high plateau of barren volcanic masses, such as tufa, trap, and basalt, covered by large glaciers. Volcanoes and hot springs are numerous on the island, and earthquakes and ash-falls are not uncommon. From the large glaciers and lakes flow great rivers in all directions. In the southwestern part of the country is found an extensive lowland between Reykjaness and Eyjafjallajökul, and on the west coast is found another less extensive lowland at Borgarfiord. The contour of Iceland, save in the south, is diversified by deep fiords, often separated by bold headlands and continued inland in long valleys. The south and west coasts are under the influence of the Gulf Stream, and have, therefore, a mild insular climate and ice-free harbors. The east and north coasts, which are exposed to the ice-laden Arctic current, have a much harsher climate.

At the time of the settlement there were in many of the valleys large forests of scrub birch, which were later for the most part destroyed. On the lowlands were found good pastures, and the cattle could go out all the year and graze. On the higher ground there was good grass for the sheep. The sea abounded in many kinds of fish and whales, and the rivers in salmon. Birds were numerous.

For several hundred years the Scandinavian peoples exhibited a remarkable power of expansion, causing a

movement which was at its height from about the year 800 till near the middle of the eleventh century, the so-called Viking Period. This movement had a gradual development. It extended both east and west, and probably commenced several centuries before the Viking Period proper. Prior to the eighth century it was apparently confined to the Baltic, but from that time we begin to hear about vikings in western Europe. At first they sailed, chiefly from southern Jutland, along the Frisian coast of the North Sea, gradually extending their expeditions to France and England. Soon they ventured directly across the North Sea from Jutland and Norway to the coasts of England and Scotland, to the Scottish Isles, and thence to Ireland. Finally, the cruises were extended along the Atlantic coasts of France and Spain and into the Mediterranean.

In the time of Charlemagne we hear of the depredations of vikings on the coasts of Frisia and France. The emperor made great efforts to defend the coasts, and even entrusted a Danish chieftain with the coast defence of Frisia. After the death of Charlemagne, however, there was no strong central government on the Continent capable of acting vigorously against the intruders. The Frankish empire was weak, owing to internal strife, and similar conditions existed in England, where the Anglo-Saxon kings were unable to repel the attacks of the Danes.

The viking ships often operated singly or in small numbers, but sometimes they combined under prominent chieftains or princes to form veritable fleets, carrying hundreds of warriors. The advanced shipbuilding and seamanship of the Scandinavians secured to them an uncontested maritime superiority. This enabled them with impunity to

descend unexpectedly anywhere on the coasts, which were naturally very difficult to defend. The simplest and perhaps the only way in which the attacks of the vikings could have been effectively checked, was by meeting them on the sea, but no serious attempt was made in that direction.

The vikings commenced by looting the coasts of the rich western countries in occasional raids. At first these raids took place only in summer, but soon the invaders, having seized upon some base on the coast, commenced to winter in the country, and finally, when the resistance of the inhabitants was broken, they settled there, dividing the soil between them, and acting as masters and conquerors. They not only harried the coasts, but penetrated far up the rivers to the wealthy cities in the interior of England, France, and Germany. In many cases Scandinavians entered the service of foreign princes, and took over the defence of their lands against other vikings. In this way whole armies of Scandinavians were organized both in England and France, some fighting on the side of the native inhabitants and some fighting against them. The conquerors, however, soon yielded to the more advanced civilization with which they came in contact. They adopted the Christian faith, and after a few generations they assimilated with the more numerous native population, by whom they were ultimately absorbed.

The Scandinavians were not content to settle in the rich, densely populated countries; they also went to colonize poorer and more sparsely settled lands, such as the Faroes and the Scottish Isles; and their enterprising spirit carried them even to new, largely unexplored and uninhabited places like Iceland and Greenland. Especially to Iceland

a large stream of emigration took its course, and, once settled on this island, the Scandinavians — in this case Norwegians, or Norsemen, as we shall here call them — were little subject to amalgamation with foreign nationalities. They preserved not only their own characteristics, their traditions, customs, and laws, but also their language. In this way Iceland, together with the Faroes, came to form a lasting addition to the Scandinavian soil, implying an actual expansion of the pure Norse population.

The deeper cause of this great movement can only be conjectured, but it is generally assumed that one of the principal factors was overpopulation. It seems likely, indeed, that this condition would persist where the people, as in Scandinavia at that time, were vigorous and healthy, and where warlike occupations were so highly esteemed that the peaceful pursuit of cultivating the soil may have been more or less neglected. The viking expeditions provided a natural outlet for the surplus population. Many persons settled abroad, many died, and those who returned often brought home rich booty, which helped to relieve the economic pressure. The warlike spirit of the Scandinavians, their love of adventure, and the easy access to wealth which presented itself by harrying the rich western countries of Europe acted as mighty stimulants to renewed efforts. Piratical expeditions became a regular institution, a permanent feature in the life of the people.

Finally, the Scandinavian countries were brought under the rule of kings, and they consolidated their power by gradually destroying the privileges and independence of the numerous chieftains who before that time had ruled practically as petty kings, each in his own district. This process

of unification necessarily met with bitter opposition from the chieftains. Many of them were banished from the country, while others preferred to leave their homes voluntarily, rather than submit to overlordship, and above all to the payment of taxes, which they considered as a sign of humiliating dependence. Thus the internal political conditions gave a great impetus to emigration.

It appears that the settlement of Iceland in particular may be explained largely as a consequence of the political and social conditions in Norway during the ninth century, when that country became grouped in larger and larger political units, ending in the complete consolidation under one king, Harald Fairhair, in the year 872. In *Grettir's Saga* we read: "There were then many great men who had fled from Norway westward over the sea, for King Harald outlawed all who had fought against him and took possession of their estates." And Snorri wrote: "During the war period, while King Harald tried to make himself master of the whole of Norway, lands were found and settled far away in the ocean, the Faroes and Iceland. Many people also went to Hjaltland [the Shetlands], and many chieftains fled as outlaws from King Harald, and went on viking expeditions to the western countries [in *Vesterviking*]; during the winter they were in the Orkneys or Hebrides [Suder Isles, Sodor], but during the summer they harried in Norway and did great damage."

The depredations on Norway here mentioned became so destructive that King Harald at last found it necessary to undertake a great punitive expedition. On this journey, which extended as far as the Isle of Man, Harald completely broke the power of the vikings settled in the Scottish

Isles, and subdued these regions to the crown of Norway, under which they remained for several hundred years.

The vikings, thus driven away from the Scottish Isles, now went in great numbers to Iceland, and were apparently joined by many Norse chieftains who were then living in Scotland and Ireland. The settlement of Iceland took place between the years 874 and 930, the so-called "Landnáma-Time" (the Time of Land-takings or Settlements), and the various families and their settlements are described in the *Landnáma Book*, written about the year 1200. This book, which is a very remarkable historical document, mentions four thousand homesteads scattered around the coasts and valleys of the island. At the end of the Landnáma-Time there were nearly four hundred chieftains in Iceland, each with his tenants and thralls, and their families. The total population was then probably about 20,000, but by the census taken in the year 1100 it was found to be about 50,000, the settlers being apparently very prolific.

While the chieftains and the freemen were mostly Norse, there were among the thralls a great number of Irish, Scotch, Germans, and other foreigners, who had been taken prisoners on the viking expeditions. Settlements were made all around the coasts of Iceland in the fiord valleys, but the most important grew up on the lowlands in the southwestern and western parts, and there was centred the historic life of the island. The most prominent and wealthy of the early settlers became the religious as well as the temporal leaders of their respective communities. Each chieftain presided at the court (*thing*), and maintained the peace, in his neighborhood; he also performed the religious ceremonies at the temple (*hof*) in his capacity as priest (*goði*), and thus each dis-

trict became, as had been the case formerly in Norway, a small independent state, self-contained in its administration and religion. The frequent lawsuits and feuds that arose between the different chieftains and their communities soon made it necessary to organize into larger units with common laws, and finally, in 927, the Althing, common for the whole island, was established. The Althing stood above the local courts and comprised also the legislative body (*lögrétta*), which controlled all laws and licenses, and was the supreme power in the land. The Althing held its sessions once a year at Thingvellir, in the southwestern part of the island. Here the chieftains met, accompanied by their followers, in order to settle lawsuits and determine legislation.

Permanent laws were adopted and gradually became very particularized and detailed. The important function of proclaiming the laws to the assembled people from the Lawhill (*lögbergi*) was assigned to a certain man, who was also president of the legislative body, and was called the law-speaker (*lögsögumaðr*). At that time, before the laws had yet been written down, the law-speaker had to "say" the law from memory. The punishments for breaches of the peace and for other offences were often very severe; they might consist in banishment from the district or from the whole island for a certain length of time or for life. The offender might be made an outlaw, "not to be fed, not to be forwarded, not to be helped or harbored in any need." Any one had a right to kill him, and all his goods were forfeited. Most frequently differences were settled by money taken in compensation, but often duels were fought to decide the issue. Unless some legal settlement were reached, the Icelander would consider it as his duty to avenge the wrong

or injury done to him or his family. Sometimes he refused to accept a fine as atonement for manslaughter of near relatives, whereupon bloody feuds ensued, which lasted many years. In these feuds incredible perseverance, energy, and courage were often exhibited in order to fulfil the sacred duty of revenge.

With the establishment of the Althing Iceland virtually became an aristocratic republic, and existed as such for more than three hundred years.

The first period after the settlement up to about the year 1030 has been called the Heroic Age. It was during this time, as explained above, that the political and judicial organization of Iceland was accomplished, and then Christian ideals commenced to find their way to the people. Hence it was a period of strong fermentation and development, full of unrest: family feuds, duels, lawsuits at home, and viking expeditions abroad. It was not, however, a period of anarchy, as might be inferred from a superficial reading of the records. The sagas describe primarily stirring events, and only a more careful study reveals to us the normal, quiet state of life, and brings out the Icelander's innate love of right and justice, and his fundamentally law-abiding spirit.

Christianity was formally introduced in the year 1000, and the first bishop was consecrated in 1056 under the Archbishop of Bremen; but later both Iceland and Greenland were placed under the Archbishop of Lund, and in 1152 they came under the newly erected archiepiscopal see at Nidaros (Trondhjem). At first the Church had no independent legislative or judiciary power, and exerted but little influence on the life and habits of the Icelanders. If the chieftains did not themselves act as priests, they at least nomi-

nated the priests, and the churches which had taken the place of the temples belonged to their estates. The end of the eleventh and the beginning of the twelfth century was the most quiet and peaceful period in the history of Iceland. It was then that saga-telling became fully developed, dealing with the heroic deeds of the previous generations, and the foundation was laid for the rich literature which soon commenced to be written down.

In the course of the twelfth century, and especially after Iceland had come under the Archbishop of Nidaros, the increasing claims of the Church to greater power and independence called forth bitter strife, and at the same time serious feuds arose among the leading families. Gradually the wealth and the political power of the island became concentrated in the hands of a few leaders, who were able to muster real armies of a thousand men or more. Hence arose a devastating era of warfare, the so-called "Sturlunga Period," in which, at the beginning, the priests also took part. So far Christianity had been unable to modify perceptibly the heathen code of honor and morals, which carried with it so much strife and bloodshed. During the thirteenth century the Church attained greater autonomy, and the bishops were made entirely independent of the chieftains and their disputes. Meanwhile, the warfare between the chieftains assumed greater and greater proportions, and the King of Norway, who was desirous of adding Iceland to his dominions, obtained ample opportunity for interference. Steadily the wealth and political power of the republic were undermined; the King of Norway acquired more and more influence, and in 1262 Iceland came under his sway.

In consequence of this long period of war, the vigor of the nation had declined, and now followed a series of disasters during the next hundred years, from the end of the thirteenth to the end of the fourteenth century. Pestilential diseases of cattle, earthquakes, ash-falls, plagues, and famine followed one after another, and finally, in 1402–04, the bubonic plague visited the island. Then Iceland entered a period of exhaustion, debility, and poverty, that formed a marked contrast to the brilliant state of former days.

We shall now go back to the early days of the colony and consider the development of its intellectual life and the character of its large body of literature, which reached perhaps a higher standard than was attained anywhere else in mediaeval Europe.

During the first century or two after the settlement no schools were found in Iceland, but young men of good family were generally sent abroad to be educated and to acquire knowledge of the world. About the beginning of the twelfth century schools were established at the episcopal sees, and the cloisters became centres of learning. Soon Iceland had a considerable group of scholars, some of whom wrote in the native language. Icelandic literature is partly poetical and mythical, partly historical, but it is particularly the latter, the so-called saga literature, with which we are here concerned.

At the beginning of the twelfth century a priest, Ari Þorgilsson, usually referred to as Ari Frode (*enn fróði*, "the wise"), wrote his *Islendinga Book*, and, according to some, was also one of the first authors of the *Landnáma Book*. The old lawbook, the *Grágás*, was written in 1117. Saga-writ-

ing was at its height about the year 1200. The sagas, even the historical ones, were essentially biographies, whether of kings, chieftains, or prominent families, the historical, political, or personal events being related largely as incidents in the life of each person whose "saga" was given.

Sometimes these sagas were not written down till several hundred years after the occurrence of the events which they relate, but they give the names and genealogies of numerous men and women, and describe scenes with such minuteness and detail as to leave little doubt in the mind of the reader as to their essential truth and accuracy.

The sagas are composed in a simple, terse style, avoiding all attempts at adornment, yet presenting to us in a remarkably vivid manner the actors, their characters, and their deeds. They bear no trace of sentimentalism or striving for effect. A realistic description of facts, often comprising minute and apparently insignificant details, brings clearly before the mind of the reader, in a few sentences, the feelings and actions of the participants.

The authors of most sagas of families and prominent men are unknown, and in some cases it can only be conjectured in what part of the island they originated. Certain sagas, however, of more general historic interest were composed by celebrated men. Iceland's greatest writer was Snorri Sturluson, whose most important books are the *Edda* and the *Heimskringla*. The former deals with ancient myths and poems. The latter gives the history of Norway from the earliest times to 1177, and is one of the most remarkable historical productions of the world. The sagas that tell of the Vinland voyages will be fully dealt with in later chapters. After the year 1300 Icelandic literature shared in the

general decline, and no great or original works were created, but the copying and collecting of existing sagas were continued with great industry. In Norway, however, a highly interesting book, the *King's Mirror*, was produced in the thirteenth century; it gives an insight into the social conditions, the geographical knowledge, etc., of that time.

Like their kinsmen in Norway and Ireland, the Icelanders were great merchants. The physical conditions of the island necessitated a lively trade with other countries, from which they obtained necessities of life, such as grain and timber, besides weapons, coins, and many luxuries. As a consequence of this trade, and also because the Icelanders took an active part in sea-roving expeditions during the Viking Period, they were in constant communication with foreign countries and much influenced by the civilization of western Europe.

Seafaring served to maintain among the Icelanders the peculiar aptitude of the Norsemen as sailors and navigators. The viking life, as well as the numerous feuds in Iceland and the fact that many Icelanders took military service in Europe, especially in the bodyguards of certain princes, kept up the military spirit. Hence, about the year 1000 and in the period immediately following, when the events took place with which we are here concerned, we find in Iceland a nation teeming with physical and mental energy, possessing in a high degree the qualities of sailors, navigators, and fighters, well fitted for exploration and colonization.

Every great farm or estate in Iceland formed a fairly independent economic unit. The population consisted of freemen and thralls, but while the freemen performed the more

skilled labor and the thralls did the rougher kind of work, there appears otherwise to have been little division of labor or specialization. Each freeman might be a farmer, smith, merchant, fisherman, carpenter, etc. The thralls would grind the mill, spread the manure, perhaps milk the cows. The women baked, brewed, wove, and the like. The houses were built chiefly of sod, which ensured warmth. In the founda-

Ruins of the House of Eric the Red in Haukadalur, Dala Syssel, Iceland

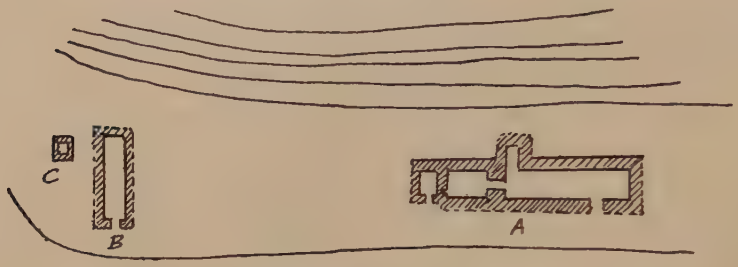
By courtesy of Capt. D. Bruun

tion of the walls stones were laid, with sod interposed. Wood was used more sparingly, and entered chiefly into the construction and support of the roof and in the gables. The sod walls were from five to six feet thick and, generally, only about five feet high.

An Icelandic farm* was made up of a number of buildings scattered over the home enclosure (*tún*). The dwelling-houses were built near together, comprising ordinarily at least one house (*stofa*) where the meals were eaten and which also served as living-room, one house (*eldhús*) which served as kitchen and bedroom, and one provision storehouse and pantry (*búr*, or *matbúr*). Later, particularly in larger farms, the bedroom was separated from the kitchen, and a separate house (*skáli*) was built, which served as

* See Valtyr Guðmundsson, *Privatboligen paa Island i Sagatiden.*

sleeping-room for the whole household. Often a bathroom (*baðstofa*) and a separate house for the women (*dyngja*) were added to the group of buildings formed by the dwelling-houses. Near by were found a smithy and storehouse for



Ruins of the Farm Áslákstunga hin Innri in Þjórsárdalur
A, Dwelling-House; B, Cow-Barn; C, Storehouse. These ruins date from a period not later than the beginning of the fourteenth century
By courtesy of Capt. D. Bruun

the winter provisions (*skemma*, or *útibúr*). Scattered over the *tún*, at smaller or greater distances from the dwelling-house, were the cow-barn (*fjós*), the stable (*hesthús*), the houses for the sheep and goats, and the hay-barns. In the outlying part of the *tún* were pens for milking the cattle.

The house that served as living and dining room contained one large hall, generally of rectangular form. Two rows of wooden posts to carry the roof divided the hall lengthwise into three parts. The floor of the middle portion was about a foot lower than that of the side portions, and was covered with clay; here were placed a series of fires (*langeldar*), surrounded by flat stones placed on edge. The smoke escaped through holes or louvres in the roof, which openings also served for the admission of light. The raised floor along the walls was often lined with planks. On it benches were placed, with tables in front of them. A high

seat (*öndvegí*) on one side was reserved for the chieftain who owned the house, and by it stood sacred pillars. A high seat on the other side was for the most honored guest. In large houses there was a dais at the end of the hall with cross benches for the women.

The fireplaces were of different types, but always open. The *langeldar* are found in most of the ruins from the Middle Ages. They consisted either of flat stones, which covered the floor, or else the fire was built directly on the floor. Sometimes the bottom of the fireplace was formed as a shallow pit. In certain *langeldar*, or close to them, has been found a small box-shaped hole, lined with stones for preserving a smouldering fire during the night. In some cases fire-pits were placed near the walls. The fireplace in the kitchen was often raised from the floor, and was built of large stones.

Captain Daniel Bruun* has advanced the opinion that the segmental pits filled with ashes, charcoal, and stones, found in the ruins of temples and in the booths of trading stations, etc., in Iceland, were fireplaces used for preparing food. These fireplaces were particularly suited for temporary use, where a great number of men were gathered together and had to be fed at once, as at religious feasts and at trading-posts during summer. Meat and bread were baked in the ashes or on heated stones placed in the pit. They were first wrapped in leaves and placed on the hot stones; other hot stones were then laid on top of them; and the whole was covered with sod, ashes, or leaves, to hold the heat. This method of preparing food was generally used all over

* *Kaptain Daniel Bruun og Professor Finnur Jónssons Undersögelser og Udgravninger paa Island*, 1907–1909 (*Geografisk Tidsskrift*), Copenhagen, 1910.

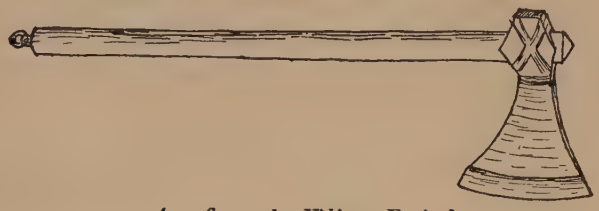
the North and probably elsewhere under earlier, primitive conditions, and is here of considerable interest. If such pits should be found on the coasts of America likely to have been visited by the Norsemen, they might be considered as evidence of such visits, and further investigations should be made on the spot.

Clothing was chiefly of frieze, dyed or undyed. Imported stuffs of silk and cotton or red wool were used only by the rich. Great care was bestowed on the hair, which was worn long by both sexes; only thralls had to cut their hair short.

The women were socially on an equality with the men, and had extensive property rights. Young maidens were highly respected and associated freely with young men, but had to guard their reputations very carefully. Breach of promise was in heathen times punished very severely, whether with men or women. Marriage was essentially a civil contract, and was generally arranged chiefly with regard to the social and economic standing of the bride and bridegroom and of their families. Ordinarily it was not allowed unless the parties together possessed sufficient means to live in reasonable comfort. The sagas give numerous instances of difficulties arising from these customs. The Icelandic wife was highly honored, and her counsel carried weight, but she often had to submit to her husband maintaining illegitimate relations with other women of the household.

Song, music, and saga-telling formed an important part of the entertainment of the Icelanders, but of all pastimes, it appears, athletic sports and games occupied the most prominent place.

It was customary for the men, except when working on the farm, always to carry arms. The commonest weapons were the axe, the sword, and the spear, although bows and arrows were often used. The axe seems to have been almost



Axe from the Viking Period

the national weapon. For defence a helmet and shield were worn, but these were not ordinarily carried about.

The moral code or precepts of the Norsemen, as apparent from the old Eddic poem *Hávamál*, maintained as the principal virtues, bravery and endurance, kindness, hospitality, and generosity to others, faithfulness to the given word or oath, fidelity in friendship or love, respect for old age, and care for the bodies of the dead. This code fostered caution in establishing new connections, and, in fact, caution in all words and deeds. Suspicion of those who were not known to be one's friends was common, but an unavoidable result of the state of unrest, strife, and feuds in which people then lived. The sagas, however, tell of many cases where help and protection were given under dangerous circumstances to strangers in distress. Although wealth was much esteemed and sought after, freedom and a good name in life, but particularly after death, were valued as the highest prize.

The Icelanders were jealous of their rights, pugnacious, and often passionate in temper, which qualities frequently

led to quarrels, involving manslaughter and prolonged feuds. As already stated, the code of honor imposed as a sacred duty revenge for the killing of relatives or near friends, and no injury or insult could be left unatoned. On the other hand, the Icelanders possessed in a marked degree a sense of law and justice which found its expression in their highly organized judiciary system. In fact, their vindictiveness was largely based on their sense of justice and honor.

Their conception of the ideal man is reflected in the following description of Gunnar of Lithend from the *Story of Burnt Njal:**

"He was a tall man in growth, and a strong man — best skilled in arms of all men. He could cut or thrust or shoot if he chose as well with his left as with his right hand, and he smote so swiftly with his sword that three seemed to flash through the air at once. He was the best shot with the bow of all men, and never missed his mark. He could leap more than his own height, with all his war-gear, and as far backwards as forwards. He could swim like a seal, and there was no game in which it was any good for any one to strive with him; and so it has been said that no man was his match. He was handsome of feature, and fair-skinned. His nose was straight, and a little turned up at the end. He was blue-eyed and bright-eyed, and ruddy-cheeked. His hair thick, and of good hue, and hanging down in comely curls. The most courteous of men was he, of sturdy frame and strong will, bountiful and gentle, a fast friend, but hard to please when making them. He was wealthy in goods."

The high esteem of the Icelanders for wisdom and goodness is revealed in the description of Njal in the same saga:

* Trans. G. W. Dasent, Edinburgh, 1861, I, 60, 61.

"Njal was wealthy of goods, and handsome of face; no beard grew on his chin. He was so great a lawyer, that his match was not to be found. Wise too he was, and foreknowing and foresighted. Of good counsel, and ready to give it, and all that he advised men was sure to be the best for them to do. Gentle and generous, he unravelled every man's knotty points who came to see him about them."

II. Greenland

CHAPTER II

GREENLAND AND THE OLD NORSE SETTLEMENTS

GREENLAND extends from the Arctic regions south to Cape Farewell, which lies in lat. 60° N., the same as Kristiania.

The east coast is washed by the East-Greenland or Polar current, which carries with it huge masses of heavy ocean ice, the so-called East Pack, from twenty to thirty feet thick, accompanied by numerous icebergs. This current turns round Cape Farewell and sets first west and then northwest up along the west coast of Greenland; but above lat. 63° to 64° it swings to the west and joins the Labrador current, to be mentioned below. A weaker branch of the Polar current seems, however, to continue north along the coast beyond lat. 64°. The speed of the Polar current is from fifteen to twenty miles a day round Cape Farewell, but off Godthaab, in about lat. 64°, only from three to four miles a day. It is not felt more than from forty to sixty miles offshore on the west coast. North of lat. 66° ships are set westward.

In Julianehaab Bay, where the old Norse Eastern Settlement was found, and up to Frederikshaab, icebergs from East-Greenland are so numerous that seven hundred may be counted from one spot, and they may be met as far as the latitude of Godthaab, where the old Western Settlement was found. Beyond Godthaab the coast is fairly free of icebergs until north of Holstensborg in lat. 67°, where we enter the northern districts for icebergs. These icebergs come from North-Greenland, and when, on their drift southward, they reach near lat. 67° they pass across Baffin Bay. The Vaigat inside Disko Island is densely covered with ice-

bergs, and a bank of them is formed off Jakobshavn in Disko Bay.

On the west side of Davis Strait we find the south-bound Labrador current, which is filled with the so-called West Pack, consisting of screwed and broken sea-ice, likewise accompanied by icebergs. These are due chiefly to the glaciers on the western coast of North-Greenland, but are probably in some measure derived from the East-Greenland current. In the summer the West Pack is from forty to sixty miles off the west coast of Greenland.

Besides the East-Greenland and the Labrador currents, a warm Atlantic current flows northward into Davis Strait, trying to fight, as it were, the East-Greenland current. It is generally traceable by the existence of warm water further out at sea in the Davis Strait, but occasionally it may reach the coast and displace the Polar current, melting the rim of ice, the so-called "ice-foot," which forms along the shore of the Greenland coast.

The East-Greenland current carries driftwood from the Siberian rivers, or possibly from the most western of the North American rivers, and deposits it along the coast up to Holstensborg, but no farther north. Also the warm Atlantic current may at times carry with it smaller quantities of driftwood.

It follows from these conditions that the east coast of Greenland is blocked by ice the greater part of the year. The East Pack makes its appearance west of Cape Farewell in January or the beginning of February, but the principal masses come in April or later. From that time the ice lies generally more or less tightly packed round Cape Farewell, off Julianehaab, and off the adjacent parts of the west coast,

Mouth of Agdliutsok Fiord, Eastern Settlement

By courtesy of M. Clemmensen

Mouth of Tasermiut Fiord, Eastern Settlement

By courtesy of Justitsraad F. Froda. Photograph by A. H. Jessen

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Mouth of Agdliutsok Fiord, Eastern Settlement

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By courtesy of Justitsraad F. Froda. Photograph by A. H. Jessen

until September, but for the last three months of the year the Cape is usually free from ice. Off Julianehaab the ice may extend to about one hundred and twenty miles from land. It usually drifts up along the west coast as high as lat. 63°, where it begins to swing westward, but may be found as high as lat. 66°.

The navigation on Julianehaab Bay is difficult and dangerous. Ships bound thither from Europe should steer past Cape Farewell and follow the boundary of the ice westward, at least as far as Cape Desolation, before they attempt to steer towards land. The farther up the coast a vessel makes land, the easier it is for it to find a passage through the ice. Just west of Cape Desolation, however, where the direction of the Polar current changes rather abruptly from west to northwest, a local spreading-out of the ice takes place, which often permits ships to pass through at that point.

If we take Cape Desolation to be the former Hvarf, we can thus understand the old sailing directions, which seem to recommend that ships should steer past, or at least up to, Hvarf before trying to make land. In the *King's Mirror** we read: "Everybody who wishes to reach the land should sail round it towards the southwest and west, until he has passed all the places where ice may be expected, and then he should make directly for land. But it has frequently happened that mariners have tried to make land too early, and have, therefore, been caught in the ice. Some of these people perished, others escaped; of these latter we have met some, and heard their tales. All of those who came into this drift ice dragged their small boats up on the ice and thus tried to reach land, but the ship with all the goods remained

* *GHM*, III, 316.

behind and was lost. Some had to spend four or five days on the ice before they reached land, some even longer."

Before leaving the description of the seas surrounding Greenland, we should consider a natural phenomenon, the so-called *hafgerðingar*, which is described in the *King's Mirror*, and also mentioned in *Landnáma* in connection with Herjulf's voyage to Greenland. Herjulf's ship, it appears, was surrounded by *hafgerðingar*, and a poem, *Hafgerðinga Drápa*, was composed about the event. According to the somewhat vague account in the *King's Mirror*, "*hafgerðingar* look as if all the storm-waves of the sea were gathered together in three continuous combers; the three wave-crests surround the whole sea in such a way that there is no escape [opening]; they are higher than big mountains and as steep as precipices, so that in but few cases have people escaped from the sea when this has occurred."

It may be conjectured that *hafgerðingar* were a phenomenon similar to what is now given the name of tidal waves, probably, in most cases, a misnomer for earthquake waves. In modern sailing directions we find a notice that in the vicinity of long. 28°–32° W. and lat. 60° N., that is, nearly midway between Cape Reykjaness and Cape Farewell, but somewhat to the south of the line between these points, the sea is said to break very strongly, and it is believed that submerged skerries or else volcanic forces are the cause. Earthquakes, which are reported to have occurred in this vicinity, may formerly have been more pronounced, and may perhaps have caused the *hafgerðingar*.

Not only is Greenland generally surrounded by ice, but a huge cap of ice covers the interior, leaving only a narrow fringe of bare land along the coasts, consisting of islands,

By courtesy of Capt. D. Bruun

Ericsvog on Öxnö, Hvammsfiord, Iceland

Here Eric the Red dwelt while banished, before going to Greenland

By courtesy of M. Clemmensen

View from Brattahlid over Ericsfiord

In the background Igdlerfigsalik Mountain

mountains, and promontories. On the west coast, below lat. 73°, this strip of land has an average width of about fifty miles, and extends with little interruption from Melville Bay to Cape Farewell, a distance of more than one thousand miles. Everywhere this mountainous belt is penetrated by deep fiords, which reach to the inland ice and terminate abruptly with great glaciers.

It was on this strip of land that the Icelanders settled at the end of the tenth century. Though barren on the outer shores and islands and on the hills, it is covered at the inner part of the fiords on the low level by a rich growth of grass together with stunted birch trees and various bushes, particularly willows. On the north side of the valleys crowberries (*empetrum nigrum*) may be found. In Ari Frode's *Islendinga Book* we find a brief but important note on Greenland, from which, as well as from the *Saga of Eric the Red* and other sources, we learn that it was first explored by Eric the Red, the son of a Norwegian chieftain who settled on the west coast of Iceland while Eric was still a child. At the Thorness Thing Eric was convicted of manslaughter and banished from Iceland for three years. He decided to seek the region discovered by one Gunnbjörn, who, being driven by gales westward from Iceland, had found some islands, Gunnbjörn's Skerries, probably on the east coast of Greenland. When Eric was banished, he lived on an island in Hvammsfiord, where ruins of his house may still be seen. He fitted out his ship in Ericsvog on Breiðifiord and sailed west from Snæfellsness. He soon sighted the glaciers of Greenland, and explored the coast, particularly around Julianehaab Bay, during the years from 982 to 985, in order to find the places most suitable for colonization. On his return, Eric

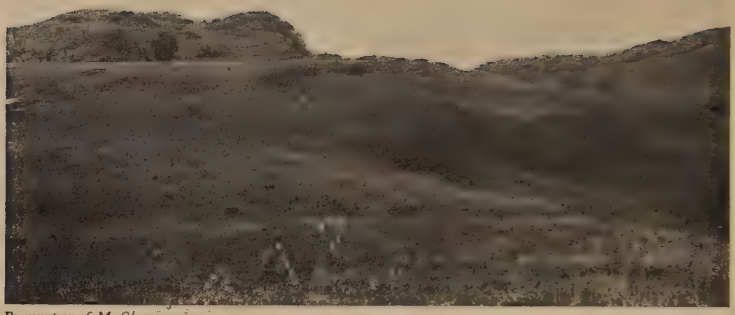
induced many other Icelanders to go with him and settle in Greenland, and it is said that twenty-five ships sailed from Iceland, of which, however, only fourteen reached their destination. Some of the ships were driven back to Iceland, but others were probably lost at sea or in the ice from the lack of experience of their crews in this dangerous navigation.

Eric settled in Ericsfiord, the present Tunugdliarfik, at a place which he called Brattahlid, now Kagsiarsuk, in 985 or 986. Two distinct colonies were founded, the Eastern Settlement, extending from about Cape Farewell to a point well beyond Cape Desolation, comprising the whole of Julianehaab Bay and the coast past Ivigtut, and the Western Settlement, beginning about one hundred and seventy miles farther north at Lysufiord, the present Ameralikfiord, comprising the district of Godthaab.

The fiord next Ericsfiord in the Eastern Settlement was Einarsfiord, now Igalikofiord. These fiords were separated at their head by a low and narrow strip of land, the present Igaliko Isthmus. It was here, at Garðar, that the Althing of Greenland met, and here was also found the bishop's seat, established at the beginning of the twelfth century. There were as many as sixteen churches in Greenland, for almost every fiord had its own church on account of the long distances and difficult travelling between the fiords.

The headland referred to in the sagas and in the old sailing directions as Hvarf, that is, the point about which the ships rounded, is believed to be Cape Desolation (Nunarsuit), the most southwestern point of Greenland.

The total population in the two settlements hardly ever exceeded two thousand, and of these by far the greater part lived in the Eastern Settlement. This is manifest from the



By courtesy of M. Clemmensen

Brattahlid

The ruins are found where the Greenlander stands in the middle of the picture, but are hidden from view by the tall grass

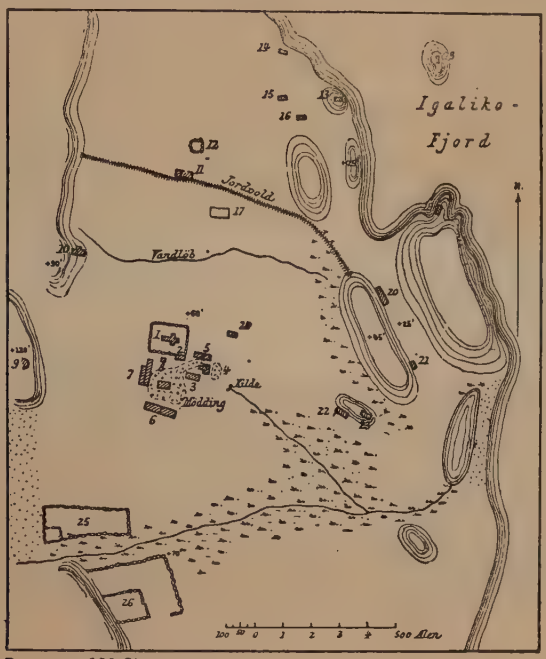
By courtesy of M. Clemmensen

View of the Plain at Igaliko. MG, XLVII

On the left are houses of the modern Greenlanders and the place where the "Thing" is believed to have been held. To the right the ruins of Garðar Cathedral and the bishop's house. In the background Igdlerfigsalik Mountain

number of ruins now left, and from the known distribution of the churches, of which there were twelve in the Eastern Settlement and only four in the Western Settlement.

Thanks to the work of Captain Gustav Holm of the Danish Navy and Captain Daniel Bruun of the Danish Army,



By courtesy of M. Clemmensen

Map of the Plain at Igaliko. MC, XLVII
After survey by Capt. G. Holm and Capt. D. Bruun, showing ruins of Garðar Cathedral and the bishop's house

carried out under the auspices of the Danish Greenland Committee,* the remains of the Norse colony in Greenland have to a considerable extent been investigated, and much light has been thrown on the life and history of the early set-

* *Kommissionen for Ledelsen af Geologiske og Geografiske Undersögelser i Grönland, MG,* VI, XVI, XLVII.

tlers, as well as on the old topography. Finnur Jónsson* has, in particular, made a study of this latter question, and has succeeded in identifying many of the churches, fiords, etc.

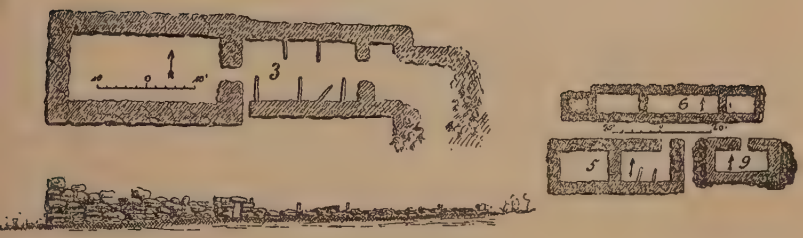
The Norsemen settled chiefly at the inner part of a fiord, on the low lands, where there were good pastures and woods, and near a river or brook, rich in salmon. Each farm consisted of a number of buildings, sometimes as many as

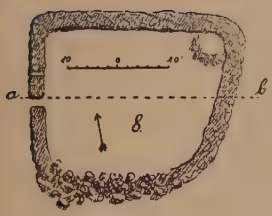
Large Pen at Kakortok. MG, VI

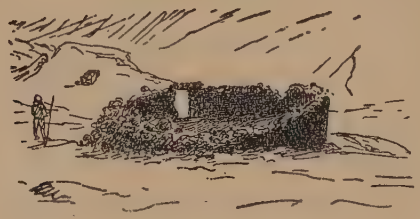
twenty. The general lay-out of the farm, as well as the construction of the houses, was much on the same plan as in Iceland. The dwelling-houses were built on a well-drained spot; if the farm was located on a fiord, it was built near a landing-place. Not far from the dwelling-houses were found scattered various smaller detached buildings, used as storehouses, smithy, and barns for the milch cows, each barn generally containing a division for the storage of hay.

* *Grönlands Gamle Topographi efter Kilderne, MG*, 1898.

This farm is of middle size, and is situated at the bottom of Sermilik Fiord. Directly north of the ruins is a steep mountain side covered with dense willow bushes, and good pasture is found on the terraces. Cows as well as sheep or goats were kept on the farm. Ruin No. 1 is the dwelling-house with its kitchen midden. No. 2 is a small house attached to the dwelling. Nos. 3 and 5 are cow-barns with haybarns attached. Nos. 4, 7, and 9 are storehouses. No. 6 is a house for sheep or goats, divided into several compartments. No. 8 is a pen for sheep or goats. No. 10 is a hay-barn.



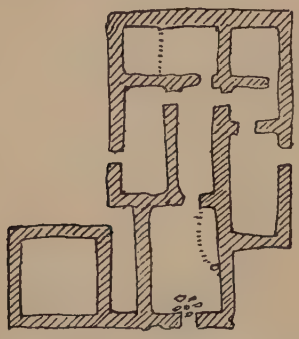




Ruins of a Farm in the Eastern Settlement. MG, XVI

At a greater distance from the dwelling-house were found other barns and houses for cows, sheep, and goats, as well as stone cattle-pens for use in the summer. Some pens were built at a distance from the farms in more remote pastures, often on a high level, corresponding to the *sæters* in Norway.

The oldest type of dwelling-house consisted in its simplest form of a rectangular structure with one or two rooms, to



Ruins of the House at Brattahlid. The home of Eric the Red

which was added an annex at the back. In larger farms were found, as in Iceland, several houses built side by side on one line, often with an annex at the back. Later structures were more complex; the houses were grouped one behind the other, being usually separated by a central passage or corridor. The ordinary length of a house with two rooms was about fifty feet; the breadth rarely exceeded twelve to eighteen feet. The walls were of only a man's height, and were from three to four feet thick. They were constructed of sod and stones, but chiefly of sod. Often the foundation was of stones; the walls were entirely of sod. Storehouses were generally built wholly of stones, or with but little sod interposed. As a result, the ruins of storehouses and barns

are usually better preserved than those of dwelling-houses.

In the Eastern Settlement good building material was available in a red sandstone which is abundant in that locality, and of this stone the best preserved ruins are constructed. In the Western Settlement building materials were scarce and the houses were made of sod and earth. Floors, even in the dwelling-houses, appear to have been made of clay. No trace of wooden floors has been found, unless the layer of charcoal, which is seen on the ground inside many of the houses, is due not only to the roof, but also to the floor. Roofs were constructed of a framework of wood covered with sod; their slope appears to have been moderate. The narrowness of the houses was probably required by the dimensions of

Eldhús with Fireplace in a Dwelling-House in the Eastern Settlement

By courtesy of Capt. D. Bruun

the spars available for construction of the roofs. These spars were obtained chiefly from the native scrub birches or from pieces of driftwood, which were generally of small size. Holes in the roof provided for the escape of smoke, and for the admission of light.

Ruins of a Church at Kakortok. Seen from Southwest. MG, XLVII

By courtesy of M. Clemmensen. Photograph by C. Wagner, 1910

Fireplaces were either built of flat stones above the floor, often in the middle of the room, or consisted of round pits, lined with stones. Fire-pits were not, however, used as much as in Iceland, probably because the Greenlanders could easily obtain vessels for cooking food from the soapstone which they could get in abundance. Along the walls were raised benches of earth or sod, which probably served as beds. Gutters were fitted for drainage of water.

Near the ruins of old dwelling-houses are still found dump heaps, often several feet deep, containing ashes, refuse from the meals, and fragments of dishes, vessels, and other implements made of soapstone. Among the refuse have been unearthed numerous bones of seal, oxen, goats, sheep, and other animals. Seal bones were most common.

Stables and barns were built of stones and sod. Cow-barns had an average breadth of from thirteen and a half to fourteen feet. The cows stood in two rows, one against each side wall, but overlapping each other, as the structure was too narrow for the rows to clear each other. The stables had stalls on one side only. The houses for sheep and goats were rarely more than from eight and one-half to ten and one-half feet wide, interior measure.

Churches were erected in the old Irish style, generally of granite, except that the cathedral at Garðar was of red sandstone. Of this cathedral, which was eighty-two feet long, nothing save the foundation is now left, but the neighboring Eskimo houses contain sandstones taken from the old structure. The best preserved ruin is of the church at Kakortok in the Eastern Settlement.

In many places the Norsemen constructed houses on prominent points near the coast and on islands. For what

purpose these houses were built is uncertain. Thus, on top of Igdlerfigsalik, a mountain 5500 feet high, to the north of Igaliko, may be seen the ruins of two small stone houses, which are generally believed to have been used for lookouts. It seems not unlikely that a lookout was kept in the season when the arrival of the trading-ship from Norway was expected. This was an event of the utmost importance to the colony, and the ship might often need help because of the difficult navigation through the ice. Numerous beacons were

Beacon, MG, XVI

erected at suitable points to serve as landmarks to people travelling overland from one fiord to another.

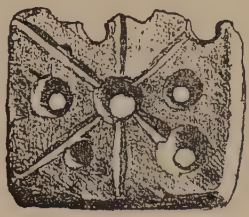
Life on Greenland must have clearly been very monotonous and narrowing. The hard struggle for existence was varied only by the arrival of ships from Europe, but these events became rarer as time went on. On the whole, the colony was very poor and the arts were primitive. The women spun yarn from the wool of the sheep and wove woolen stuffs on their handlooms. All dishes, jars, and other vessels were made of soapstone, as mentioned above.

Sketches* are here given of some of the objects found

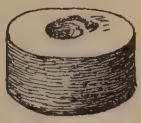
**MG*, XVI and XLVII.

among the ruins in different localities in Greenland. It is hoped that these sketches, as well as those in the chapter on Iceland, will prove useful in the investigation and

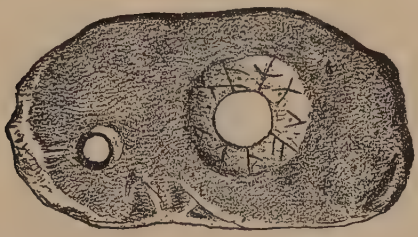
Spinning Stone
Half size



Perforated Piece of Soapstone
Half size



Checker of Bone
Two-thirds size

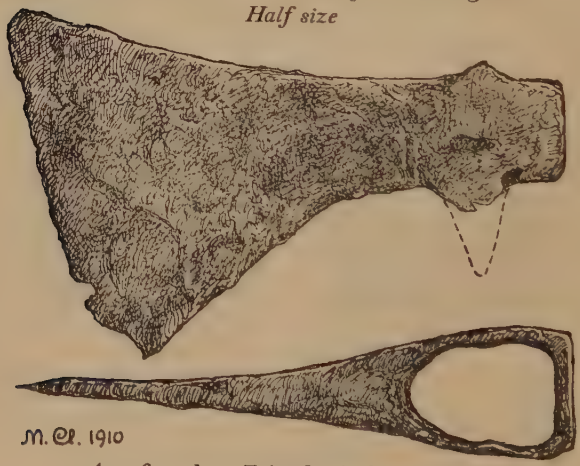


Perforated Piece of Soapstone with Runic Inscription
Half size

Perforated Pieces of Soapstone
Half size

[*MG, XVI*]
Drawn by Capt. D. Bruun

Wooden Cross from Graveyard at Ikiguit
Half size



Axe found at Ericsfiord. MG, XLVII

By courtesy of M. Clemmensen

Flat Soapstone with Ornaments. MG, XVI
Drawn by Capt. D. Bruun

identification of ruins and objects which may be found on the coasts of America.

For the sake of completeness, the later runic alphabet used by the Norsemen in the Viking Period is inserted

The Later Runic Alphabet

here. It will be noticed that there are only sixteen symbols, whence some of the runes signify two different sounds, and several vowels are not expressed. Thus each pair of the letters *k* and *g*, *t* and *d*, *p* and *b* is expressed by the same symbol. The runic inscriptions cannot, therefore, be properly read without an intimate knowledge of the Old Norse (Icelandic) language and its development.

The Norsemen in Greenland lived chiefly by sealing, stock-raising, and fishing. Seal were caught in the fiords and salmon in the streams. Cows, sheep, and goats were

kept in great number; the cattle were a small breed. The Greenland Norsemen made much butter and cheese. They also hunted or trapped the greater mammals, such as polar bears and reindeer, as well as foxes and wolves. They had no kind of native grain, and for this, as well as for lumber of even moderate size, they depended entirely on importation.

The principal fishing and hunting grounds were at a considerable distance to the north on the west coast of Greenland, at the so-called "Nordrseta." From the *Greenland Annals of Björn Jónsson* we learn that the leading farmers in Greenland had large vessels, built to send north along the coast for hunting seal, wolves, and perhaps whale. At Nordrseta was good fishing; there also were the breeding-places of the eider-duck; and driftwood was gathered. The men who thus went north were called Nordrseta-men; they had their huts in the northern regions at certain places, of which Greipar and Krogfiordsheath (*Króksfiarðarheiðr*) are mentioned in the sagas.

We do not know how far north the Nordrseta-men ordinarily went, and we are unable with certainty to give the location of the places just named. It appears, however, that the name Krogfiordsheath applied to the district between Disko Bay and Holstensborg. North Strömfiord and adjacent inlets, or Disko Bay with the Vaigat, may with their crooked form have given rise to the term "Krogfiord." The land uncovered by glaciers is here wider than at any other part of the coast, and is much lower than farther south; in former times it furnished the best of all pastures for the reindeer in Greenland. In the district between Holstensborg and Svartenhook there was excellent hunting of wolves and seal. As driftwood was found at Nordrseta, this place cannot

have been far north of the Holstensborg district. At Greypar "seal-tar" was made. The blubber was melted and poured into skin-bags, which were suspended in the wind in drying-houses. After it had congealed, it was prepared.

That the Greenland Norsemen at times ventured much farther north than Disko seems, however, certain. In the *Annals of Björn Jónsson* we find the following remarkable account, written by a priest in Greenland, of an exploring expedition undertaken by the Norse Greenlanders to the Arctic regions in the year 1266:

"That summer came also people from Nordrseta, who had travelled farther north than we have formerly heard of. They saw no sign that Skrælings had lived there except at Krogfiordsheath, and it is thought that this must be the shortest way for them [the Skrælings] to go, from wherever they get there. Thereupon the priests sent a ship northward in order to explore the regions north of the farthest point which they had hitherto visited; but they sailed out from Krogfiordsheath, until they lost sight of the land. Then they had a south wind against them and darkness, and they had to let the ship go before the wind; but when the storm ceased and it cleared up again, they saw many islands and all kinds of game, both seals and whales and a great number of bears. They came right into the sea-bay (*allt í hafsbotninn*), and lost sight of all the land, both the southern coast and the glaciers; but south of them were also glaciers, as far as they could see. They saw signs that the Skrælings had dwelt there in former times, but on account of the bears they could not land. Thereafter they sailed back in three days, and found some remains of Skrælings on some islands south of Snæfell. Then they sailed southward to Krogfiordsheath,

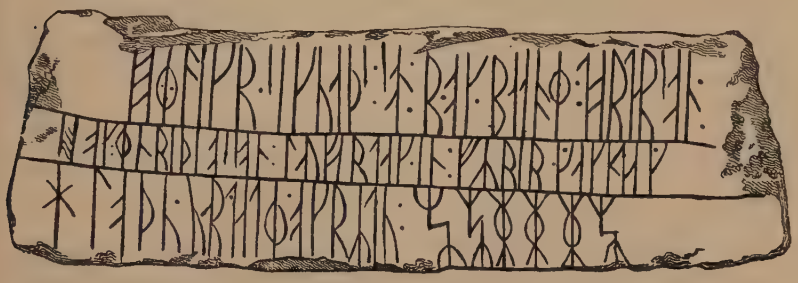
one good day's rowing, St. James's Day [July 25th]. It was frosty at night, but the sun shone both night and day, and was not higher in the south than that, when a man placed himself athwartships in a six-oared boat [with his head] up against the railing [or gunwale] on one side of the boat, the shadow of that side [gunwale] which was nearest to the sun would strike his face; but at midnight the sun was as high as at home in the settlement when it is in northwest. Thereafter they travelled home to Garðar."

The object of this expedition is not clear, but it looks as if it was sent out to discover where the Skrælings came from and where they lived. It is impossible to determine where the explorers got, but they must have penetrated far north or west into Baffin Bay. Possibly they passed through the so-called "middle water" to the western shores of Baffin Bay. The glaciers that they saw to the south of them would then have been on the northeastern part of Baffin Land.

In the *Annals of Björn Jónsson* is found an old chorography, in which it is stated that it took six days' rowing with six men in a six-oared boat from the Eastern to the Western Settlement (here the names of the fiords in this latter place are given), thence from the beginning of the Western Settlement to Lysufiord six days' rowing, from there six days' rowing to Karlsbooths (*Karlbuðir*), then three days' rowing to Bjarney, and twelve days' rowing round Bjarney, Eisuness, and Aedaness north. Since the Bjarney here mentioned may be the same as that which is given as the starting-point of Karlsefni's voyage (*ER*), it would be of interest to know where this island was located. Unfortunately, the above statements are not clear, since Lysufiord is known to have been at the beginning of the Western Settlement.

Perhaps the passage in question should read: "thence from the beginning of the Western Settlement *at* Lysufiord six days' rowing to Karlsbooths." In that case Bjarney might be Disko Island in lat. 69°–70°. The description is too confused, however, to permit any definite opinion on the point.

Positive evidence of the Norsemen's explorations of North Greenland is found in a small runic stone, discovered in 1824 near the ruins of some beacons on the island of Kingiktorsuak in lat. 72° 55′, north of Upernivik.* This stone,



Runic Stone found at Kingiktorsuak, Lat. 72° 55′. MG, XLVIII

of which an exact picture is given in *Antiqvariske Annaler*, volume iv, was later lost, but a copy of it is preserved in the National Museum in Copenhagen. The inscription, which Professor Rask and other authorities have declared to be genuine, seems to indicate that it dates from about 1300. It has been read as follows: "*Ellingr. Sigvaps: son: r. ok. Bjanne: Tórtarson: ok Enridi. Osson: Laugardag. inn: fyrir. Gagndag hlódu. varda te. ok ruddu* (*v. ritu*) *MCXXXV* (*?*)," and has been thus translated: "Erling Sigvatsson and Bjarne Thordarson and Endride Oddson built this (or these) beacon(s) Saturday after 'Gagnday' (April 25th) and

* *GHM*, III, and *Antiqvariske Annaler*, 1827, by Professor Rasmus Rask and Professor Finn Magnusen.

cleared (the place) (or made the inscription) 1135 (?)." The reading of the year is uncertain.

Trade in Greenland was based on the export of hides, in particular sealskins, ropes of walrus hide, and walrus tusks. Imports consisted of lumber, iron, grain, and innumerable other articles of necessity and luxury which could not be produced or manufactured at home.

The Greenland colony seems to have enjoyed its highest prosperity in the eleventh and twelfth centuries. During the thirteenth century it may have held its own, but in the fourteenth it was decidedly on the decline, and in the fifteenth it was completely extinct. For our knowledge of the colony, especially during the last centuries of its existence, we are largely indebted to the Church. We have an almost complete list of the bishops of Greenland to the end of the fourteenth century. Later also, even up to the beginning of the sixteenth century, bishops were nominated for Greenland, but they never reached the country. From a papal bull of 1282 we learn that the Greenland-tithes were paid in ox-hides, sealskins, and walrus tusks. One of the latest facts to come to light is a papal letter, dating from 1492, which was recently found in the papal archives by a Dalmatian priest, Dr. Jelič. Speaking of Greenland, this letter says (in abstract): "The inhabitants have no bread, wine, or oil, but live on dried fish and milk. Navigation is very rare, and landing can take place only in August, after the ice is melted. Therefore it is believed that during the last eighty years no ship has reached there, and no bishop or priest has resided there. The consequence has been that most of the inhabitants have abandoned the Christian faith." These statements correspond well with what we know from other sources.

By the year 1500 Greenland was practically a lost country, but its position had been then recorded pretty correctly on the maps of Claudius Clavus, and the old sailing directions preserved in Icelandic manuscripts were tolerably accurate and complete. In 1576 Greenland was rediscovered by Frobisher.

Several concurrent causes appear to have contributed to the pathetic ending of this outpost of European civilization. In 1261 the colony came under the crown of Norway, and its trade was soon after monopolized by the king, which probably made for disaster. From then on, its only, or at least its chief, connection with the rest of the world was the Norwegian trading-ship, the so-called "Greenland Knörr," which sailed from Bergen at very irregular and long intervals, generally of several years' duration. The last time we hear about the Knörr was in 1410, when it sailed from Greenland to Norway, but it is possible that there was connection between the two countries later in that century.

It appears that during the era of decline of the Norse colony a southward advance of the Eskimos along the west coast of Greenland took place. It began perhaps as early as in the thirteenth century, and may have been caused by the pressure of an immigration of other tribes from the north, across Smith Sound. While the Eskimos increased, the Norse population declined in number and vigor. Fights, we know, occurred between the two races, but probably friendly intercourse also existed, perhaps for prolonged periods.

Evidence of fighting is found in a note in the report of Ivar Baardson,* according to which the Western Settlement was harried and destroyed by the Skrælings some time

* *GHM*, III, 259.

after 1341. Further, according to the *Icelandic Annals*,* the Skrælings, in 1379, made an attack, probably on the Eastern Settlement, in which they killed a number of the Norsemen and took many prisoners.

Among the tales and traditions of the Eskimos collected by Dr. Henry Rink† occur five that deal with the relations between the *Kaladlit* (plural of *Kalaleq*, as the South-Greenland Eskimos called themselves) and the *Kavdlunait*, as the Norsemen were called by the Eskimos. They chiefly concern the feuds between the Eskimos and the Norsemen, but they also tell of friendly relations.

The most striking of Rink's tales narrates how the Eskimos sneaked into the fiord where the Norsemen lived with whom they were at war, and set fire to their house. The Norse chieftain, Ungortok, escaped through a window with his son in his arms, but, being followed by the Eskimos, he had to throw his child into a lake. He succeeded in reaching Igaliko, where he took refuge with another chieftain, Olave, but, still pursued by his special enemy, the Eskimo Kaisape, he fled from fiord to fiord until he was finally overtaken and killed.

Another of these tales deals with the first meeting between the Eskimos and the Norsemen. A boat's crew of Eskimos landed at Nook (Godthaab, in the Western Settlement). They traversed the fiord, and near Kangiusak they came upon a large house; but on getting closer to it, they did not know what to make of the people, seeing that they were not Kaladlit. In this manner they had quite unexpectedly come across the Kavdlunak settlers. These likewise for the first time saw the natives of the country, and treated them kindly

* *GHM*, III, 33. † *Tales and Traditions of the Eskimo*, 1875.

and civilly; but the Eskimos nevertheless feared them and made for the boats. On getting farther up the fiord, they found many Kavdlunait stationed. However, they did not put in anywhere, but hastened away as fast as possible. Later on, in the summer, intercourse was established and all went well.

A third tale relates how two Norse women were kidnapped by the Eskimos and lived with them.

The occurrence of the Norse name Olav in the first-mentioned tale, as well as other internal evidence, leaves hardly any doubt that in these tales we have traditions which actually refer to the old Norse colony.

Nansen believes that the Norsemen, being more and more deprived of the products of civilization, must have gradually approached the Eskimo mode of living, which was better adapted to the existing natural conditions. He suggests that during the peaceful periods which must have existed, close intercourse established itself and was accompanied by a gradual fusion of the two peoples. Thus, the final disappearance of the Norsemen was due, in part, to their absorption by the more numerous Eskimo population. This theory is most important, since it opens up fresh possibilities and a new field of research as to the ultimate fate of the Norse colony in Greenland. It might be objected that if such a fusion had actually taken place, we should have heard more about it; but this does not follow. The comparative silence of the reports on this point may be due to the fact that intercourse with the heathen was strictly prohibited by the Church. Such intercourse was regarded with the greatest abhorrence by all good Christians, and every effort must have been made to prevent reports of it from reaching the

outside world, especially the ecclesiastical authorities in Norway and Rome. Judging from the Eskimo traditions, the Norsemen did actually associate with the Eskimos, and even took pains to learn their language. Little by little, since the Church no longer infused new religious life in the colony by sending out priests, the Norsemen relinquished the Christian faith and merged completely with the Eskimo population. In spite of all efforts to conceal the fact, reports of it reached Iceland, as is seen from the annals of Bishop Gisle Oddson,* written in Iceland before 1637. At the year 1342 we read: "The inhabitants of Greenland voluntarily forsook the true faith and the Christian religion, after having abandoned all good morals and true virtues, and were converted to the peoples of America [*ad Americæ populos se converterunt*]." This statement has been interpreted by some to mean that the Norsemen emigrated to America, but it seems more likely that it simply asserts that they associated with the Eskimos and adopted their mode of living. When Greenland was rediscovered in the sixteenth century, it was found that many of the Eskimos exhibited traits which indicated admixture with European blood. Nansen's view, which appears to be fairly well substantiated by these and other facts, leads to an entirely new theory, according to which the mixed tribes resulting from the fusion of the Norsemen with the Eskimos migrated westward across Smith Sound to the American Arctic archipelago in the centuries following the extinction of the Norse colony. This theory is supported by various bits of evidence, some of which are of old date or traditional, while others have quite recently come to light.

* *GHM*, III, 594.

César de Rochefort* gives an account of the voyage of a ship from Flushing, commanded by Nicolas Tunes, who, in the summer of 1656, reached lat. 75° in Baffin Bay. Tunes describes two distinct types of natives, who seemed to live together in harmony. Of these one kind was very tall of stature, well built, and of blond complexion. The other was shorter, of olive complexion, and had short, thick legs. The men of the former tribe were good runners and lived by hunting, the latter tribe lived by fishing.

Dr. Franz Boas, in his work on *The Central Eskimo*,† relates the following interesting tradition of the Baffin Land Eskimos about a certain tribe which he calls the "Tornit" people:

"In olden times the Inuit [the American Eskimos] were not the only inhabitants of the country in which they live at the present time. Another tribe similar to them shared their hunting-ground. But they were on good terms, both tribes living in harmony in the villages. The Tornit were much taller than the Inuit and had very long legs and arms. Almost all of them were blear-eyed. They were extremely strong and could lift large boulders, which were by far too heavy for the Inuit. But even the Inuit of that time were much stronger than those of to-day, and some large stones are shown on the plain of Miliaqdjuin, in Cumberland Sound, with which the ancient Inuit used to play, throwing them great distances. Even the strongest men of the present generation are scarcely able to lift them, much less to swing them or throw them any distance.

"The Tornit lived on walrus, seals, and deer, just as

* *Histoire des Isles Antilles de l'Amérique*, Bk. I, ch. xviii.

† *Sixth Report of the Bureau of Ethnology*, Washington, 1888, p. 634.

the Eskimos do nowadays, but their methods of hunting were different. The principal part of their winter dress was a long and wide coat of deerskins, similar to the jumper of the Eskimo, but reaching down to the knees and trimmed with leather straps. When sealing in winter they wore this garment, the lower edge of which was fastened on the snow by means of pegs. Under the jacket they carried a small lamp, called *tumiujang* (literally, resembling a footprint) or *quming*, over which they melted snow in a small pot. Some Eskimo say that they opened the seals as soon as they were caught and cooked some meat over these lamps. When the seal blew in the hole they whispered, '*Kapatipara*' (I shall stab it), and, when they had hit it, '*Igdluilik*.' Frequently they forgot about the lamp, and in throwing the harpoon upset it and burned their skin.

"All their weapons were made of stone. For the blades of their knives they used green slate (*uluqsaq*, literally, material for women's knives), which was fastened by ivory pins to a bone or ivory handle. The points of their harpoons were made of bone, ivory, or slate; those of their lances, of flint or quartz, which was also used for drillheads; but they made neither kayaks nor bows.

"Their method of hunting deer was remarkable. In a deer pass, where the game could not escape, they erected a pile of cairns across the valley and connected them by ropes. Some of the hunters hid behind the cairns, while others drove the deer towards them. As the animals were unable to pass the rope they fled along it, looking for an exit, and while attempting to pass a cairn were lanced by the waiting hunter, who seized the body by the hind legs and drew it behind the line. This tale is related as a proof of their

Prince Albert Sound Group, all of whom show blond tendencies

Reproduced from Dr. V. Stefánsson's "My Life with the Eskimos," by courtesy of the publishers, Macmillan Co. Photograph by Dr. V. Stefánsson

enormous strength and it is said that they were able to hold a harpooned walrus as the Eskimo hold a seal.

"The Tornit could not clean the sealskins so well as the Inuit, but worked them up with part of the blubber attached. Their way of preparing meat was disgusting, since they let it become putrid, and placed it between the thigh and the belly to warm it.

"The old stone houses of the Tornit can be seen everywhere. Generally they did not build snow houses, but lived the whole winter in stone buildings, the roofs of which were frequently supported by whale ribs. Though the Eskimo built similar structures, they can be easily distinguished from one another, the bed of their huts being much larger than that of the Tornit.

"Though both tribes lived on very good terms, the Inuit did not like to play at ball with the Tornit, as they were too strong and used large balls with which they hurt their playfellows severely.

"A remarkable tradition is told with reference to the emigration of this people.

"The Tornit did not build any kayaks, but as they were aware of the advantages afforded by their use in hunting, they stole the boats from the Inuit, who did not dare to defend their property, the Tornit being by far their superiors in strength. Once upon a time a young Tuniq (Tornit) had taken the kayak of a young Inung without asking him and had injured it by knocking in the bottom. The Inung got very angry and ran a knife into the nape of the Tuniq's neck while he was sleeping. (According to another tradition he drilled a hole into his head; this form is also recorded in Labrador.) The Tornit then became afraid that the Inuit

would kill them all and preferred to leave the country for good. They assembled at Quernivtung (a place in Cumberland Sound, Baffin Land), and in order to deceive any pursuers they cut off the tails of their jumpers and tied their hair into a bunch protruding from the crown of the head.

"In another form of the tradition it is said that while playing with the Tornit a young Inung fell down and broke his neck. The Tornit feared that the Inuit might take revenge upon them and left the country.

"Many old ditties are sung which either treat of the Tornit or are reported to have been sung by them. Some of them will be found in the linguistic account connected with my [Dr. Boas's] journey."

According to Dr. Boas, the tradition as here given, which is the Baffin Land version, is found in a similar form in Labrador. It exists also in Greenland,* but there the tribe is entirely fabulous, each individual being of enormous size, living inland, and seldom hunting in the upper parts of the fiords. While in the western part of the Eskimo country a more historical form of the tradition is preserved, it is entirely mythical in Greenland.

Though the reports of the Tornit people are mere traditions, they nevertheless point to the existence in Baffin Land, in perhaps not very remote times, of a hybrid tribe of Eskimos, who might well, according to the description, be descendants of the old Norse-Eskimo tribes of Greenland. The stay of this tribe in Baffin Land may mark one of the stages in its westward migration. There are numerous reports of Eskimos of mixed origin, presumably of European type, seen by the explorers of Arctic North America in the nineteenth cen-

*Rink, *Tales and Traditions of the Eskimo*, p. 469.

Photograph by courtesy of Dr. R. M. Anderson, 1911

Eskimos from a Village on Coronation Gulf

Dr. Stefánsson in centre (with wolverine-trimmed hood), to show comparative stature; Dr. Stefánsson is about 5′11″

tury, but the most recent and most important fact which has come to light is the discovery by Dr. Vilhjálmur Stefánsson of the so-called "Blond Eskimos" in the region of the Coronation Gulf.* On Victoria Island, in the Arctic archipelago, about midway between Baffin Land and Alaska, Stefánsson found, in 1910, several tribes of Eskimos, among whom a great number of individuals possessed more or less resemblance to white men. These people could not in recent times have had any contact with whites that would have changed their physical type.

Stefánsson says: "Of something less than a thousand persons, ten or more have blue eyes (no full-blooded Eskimo has a right to have blue eyes, as far as we know — his eyes should be as brown and his hair as black as those of the typical Chinaman); some of the men eradicate their beards (pull out the hairs by the roots, as many Indian tribes do also), but of those who have beards a good many have light-brown ones; no one seen has light hair of the golden Scandinavian type, but some have dark-brown and rusty-red hair, the redness being usually more pronounced on the forehead than on the back of the head, and perhaps half the entire population have eyebrows ranging from a dark brown to a light brown or nearly white. A few have curly hair.

"It is, however, not only the blondness of the Victoria-Islanders that suggests the European, but also the form of their heads, as shown by measurements of adult males."

The accompanying pictures (facing pages 46 and 48) give a good idea of the type. The great height of some of

**My Life with the Eskimo*, New York, 1913, pp. 191-202; *National Geographical Magazine*, December, 1912; Greely, *Origin of Stefánsson's Blond Eskimo.*

the men is very striking, and some of the faces unquestionably remind one of typical Scandinavians.

It is of interest to note that the Eskimos of northern Alaska, who have been exposed to strong European influence for over a hundred years, have preserved their Eskimo characteristics. Many American whalers have married Eskimo women and have settled in the country, but even this mixing of the races has not, according to Stefánsson, produced in northern Alaska such a blond type as found in Victoria Island. In fact, most of the individuals of mixed descent cannot be distinguished offhand from full-blooded Eskimos, and they do not as a whole present an appearance so North-European as the three tribes in southwest Victoria Island.

The widespread nature of the European characteristics among these tribes seems to show that the mixture took place at a very remote period, and their persistence indicates that European women as well as European men must have been partners in the admixture. Since no intercourse between Eskimos and Europeans appears to have occurred in post-Columbian times, which could account for such thorough mixing of the races, the only, or at least the most plausible, explanation of the facts recorded by Stefánsson seems to be that the Blond Eskimos, as suggested above, are related to the Norse Greenlanders. Further study of these tribes is needed to throw light on this question, but Stefánsson has at least shown that the language and customs of the Blond Eskimos point to a closer relation to the eastern than to the western tribes of America.

The Gokstad Ship

Photograph by O. Væring

CHAPTER III

THE SHIPS OF THE NORSEMEN

BEFORE discussing the navigation of the Norsemen, we shall consider briefly the means at their disposal for making their extended voyages across the ocean.

It is fortunate that we have tolerably complete information on this point, thanks to the remarkable finds of vessels from the Viking Period made in Norway during recent years. We shall base our description on the so-called Gokstad ship,* the largest of the vessels discovered, which, although probably built chiefly as a warship, approaches in type and size the seagoing trading-ships of that time. Afterwards we shall discuss the essential points of difference between the two types.

The Gokstad ship, which dates probably from the ninth century, was found in 1880 near Sandefiord, at the entrance to the Kristiania fiord. A chieftain or king had been buried in it, and we owe its preservation to the circumstance that there was thrown up over it a mound of blue clay, which prevented the access of air and thus kept the wood and other materials from decay. The principal dimensions of the ship are as follows:

Length over all 101 feet
Length in water-line about 85 feet
Breadth, extreme 16 feet 7 in.
Draft 3 feet 8 in.
Freeboard amidships 3 feet
Displacement about 30 tons
Complement about 40 men

*N. Nicolaysen, *Langskibet fra Gokstad*, Kristiania, 1882.

As seen from Plate I, the lines of the Gokstad ship were very fine; the broad and shallow form secured great stiffness. The ship had one mast with a square sail, and could, moreover, be propelled by oars, of which there were thirty-two, sixteen on each side. By way of comparison, it may be stated that by statute the smallest size of the ships which the various districts in Norway must place at the king's disposal in time of war had forty oars. The hull was of oak, clinker built on frames thirty-nine inches apart. The frames were not continued to the gunwale, but stopped at the beams, which rested on top of them. Above the beams the place of the frames was taken by knees, to which the upper planks were fastened. The lower limb of the knees rested on the upper side of the beams. In addition short intermediate frames were fitted, which went down from the gunwale between each alternate pair of knees, constituting the chief connection between the lower and the upper part of the ship. Plate II shows the midship section.

Bottom boards, or flooring placed lengthwise from beam to beam, formed a complete platform or deck, which separated the lower part of the ship from the upper. The oarsmen were probably seated on small portable seats, of which, however, no remains have been found. It is known that in larger ships seats were fitted on each side above the beams. While the planks of the bottom were fastened to each other by iron rivets, the connection between the planks and the frames, as well as between the keel and the frames, was effected by withies, probably the roots of birch trees. These withies were passed through holes in the under side of the frames and corresponding holes in cleats carved out of the wood on the inner surface of the planks. (See sketch on

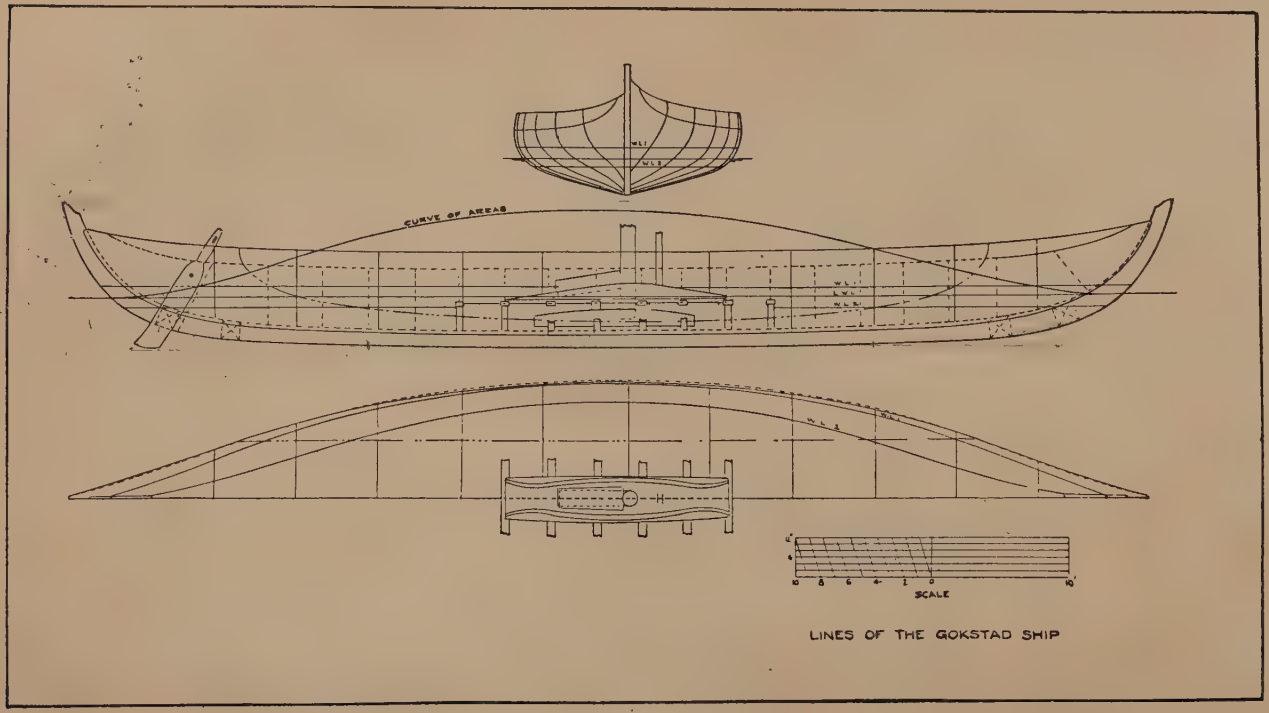
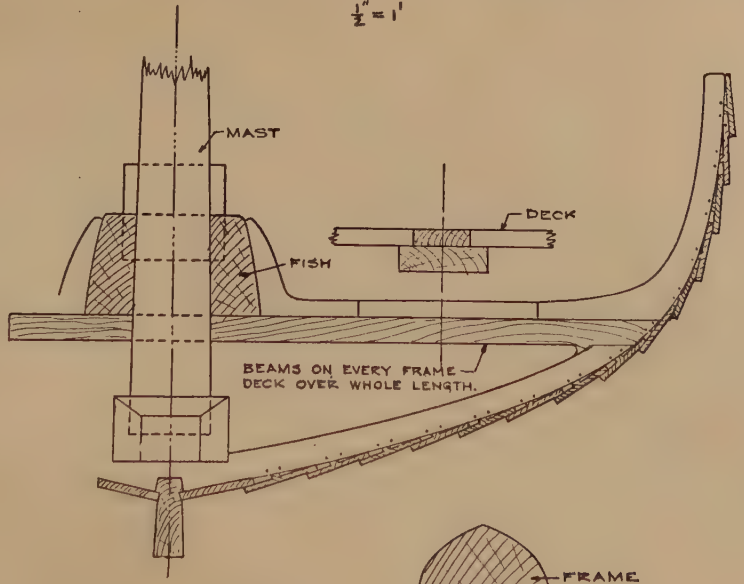


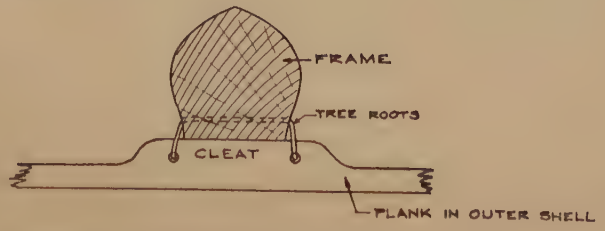
Plate I

From Trans. Inst. of Naval Architects, 1881

MIDSHIP SECTION OF THE GOKSTAD SHIP.

½" = 1'





METHOD OF CONNECTING FRAMES AND PLANKS.

Plate II.) This mode of fastening the planks to the frames is of particular interest. It involved great labor, but it gave to the hull a high degree of flexibility or yielding capacity, which enabled it to stand the great strains incidental to the movements in a seaway and in the surf, better than would have been the case with a more rigid fastening. It seems, indeed, doubtful whether it would be possible, with such light scantlings as were used in these vessels, to have attained sufficient strength if metal bolts had been used instead of withies. Above the beams the planks were fastened to the aforesaid knees by treenails.

It appears that the Norsemen had no hemp ropes. Their ropes, light and heavy, were made of bast, cattle hair, leather, or withies. In the Gokstad ship there were found many pieces of ship's rope, all of bast, which was probably the material most commonly used. Watertightness was obtained by inserting cattle hair, spun in three-stranded cords, between the bottom planks. Probably these cords were laid between the planks while the vessel was being built, and not calked in afterwards. In the Nydam boat,* the oldest Scandinavian vessel so far discovered, dating probably from the third century A.D., the calking is effected by a woolen stuff and a pitchy, sticky substance. In some ships the bottom was paid with tar, but in the Gokstad ship it appears that the bottom was unpainted. The rudder was hung on the starboard quarter and was shaped like a large oar; at its upper end it had a transverse tiller. It was suspended in a heavy rope, fixed about the height of the water-line to a heavy wooden block or cushion of conical

* See George H. Boehmer, *Prehistoric Naval Architecture of the North of Europe.*

shape on the side of the ship. Another block or wooden pillow was fitted outside the ship at the height of the sheer strake; it had a semi-cylindrical, vertical groove in which the rudder head rested, held in place by a loop or grommet. When the ship came into shallow water, where the rudder, projecting below the keel, would take the ground, it could be raised or tilted to a nearly horizontal position by means of a line fixed at its lower end. As late as the fourteenth century, rudders were thus hung on the right-hand side of the ship (looking forward), whence the term starboard (*stjórnborði*, rudder side; Danish and Norwegian, *styrbord*) for this side of the ship, while the side to which the helmsman turned his back was called *bakborði*.

The mast, which could be raised and lowered, stood in a step formed in a long oaken block slotted over the frames and resting on the keel. The mast was, moreover, supported by another long and very heavy block of oak, the "fish," fitted on top of the beams. It extended over six frame spaces, and was fixed to the beams by knees of crooked timber heads. Both ends were carved or shaped to represent roughly the tail of a fish. (In Denmark and Norway the mast partners are still called *fisken* (the fish).) Along the middle of the fish there was a rectangular slot, through the forward end of which the mast projected. A heavy portable slab closed this slot like a lid and held the mast in an erect position. (See Plates I and II.) When this slab was removed the mast could be lowered and raised again, for which purpose the anchor winch found in the bow was probably used. The anchor itself was of iron with wooden stock, quite like the later "navy" or "admiralty" type.

The rowlocks consisted of holes in the sheer strake. The

oars were of spruce, about twenty feet long, but diminished in length from amidships towards the ends; they were passed into the rowlocks from the inside. The rowlocks could be closed with sliding shutters.

No less than three smaller boats were found in the Gokstad ship; they were, respectively, twenty-five feet, eighteen feet, and thirteen and a half feet long on the keel, and, like the big ship, were provided with oars. At least two of them carried a mast and a square sail.

A tent, of a rather fine woolen texture with red stripes sewed across, was used for shelter. It was supported by stanchions and a ridgepole. In the fore part of the ship were found the remains of five berths.

Along the sides were placed the shields, painted alternately yellow and black, overlapping each other, and thus, in some measure, increasing the freeboard. The shields were circular of about three feet diameter, made of thin boards with a plate of iron on the middle to protect the hand. A stiffening rib on the inside formed a handle at the centre. A heavy plank with steps cut in it served as a landing.

The inventory preserved with the ship throws much light on the mode of living of a seafaring man in those days. Wooden dishes and wooden drinking-cups were used. A large copper cauldron with a chain for suspending it over the fire was used for cooking food, but probably only on shore, since there is no evidence that a fire had been or could be built on board the ship. Probably salt meat, pork, and dried or salt fish formed the chief provisions when at sea. Pieces of dark woolen cloth, of silk interwoven with gold thread, and ornaments of bronze, lead, and iron, bear witness to the advanced civilization of the Norsemen of the day.

The bilges were emptied by buckets or large dippers; pumps were probably not introduced till the twelfth century. The weight of the hull, with inventory, stores, and equipment, of the Gokstad ship hardly exceeded eighteen tons. If we reckon a crew under war conditions of some seventy men, and allow two hundred and twenty-five pounds per man with effects, the weight of crew and effects would be about seven tons, leaving some five tons for carrying arms and other extra load. It appears that the load, if any, was placed principally on top of the beams, in the upper part of the ship, the beams being to this end supported at their middle by props stepped in the throats of the floors.

The Gokstad ship was a so-called "longship," built principally for war purposes. Such ships were relatively long and narrow and were designed for high speed, with oars as their principal means of propulsion. Their freeboard was generally small; they were not ocean-going craft, but were frequently used for crossing the Baltic and the North Sea. The biggest longship ever built in Norway up to A.D. 1000, the "Long Serpent" (*Ormr inn langi*), was 160 feet long over all, and is said to have had thirty-four pairs of oars. According to *Heimskringla*, the bulwarks of the Long Serpent were as high as in a ship built for sailing on the ocean, showing that ordinarily longships had less freeboard than seagoing ships.

The so-called "knörrs" were relatively shorter and of higher freeboard than warships; they could stand better than longships the strains to which they were exposed when working in a seaway, and were on the whole more seaworthy and more strongly constructed. They depended chiefly on sail power, and would, therefore, often have to

The Gokstad Ship

Photograph by O. Væring

wait for a favorable wind. They had, however, some oars as auxiliary power, rigged forward and aft of the cargo, which occupied the central portion of the ship.

Trading-ships had generally only a partial deck or flooring forward and aft, and sometimes a narrow passage along the sides, connecting the decks at the ends. The remainder of the hold was open, and here the cargo was stowed, often piled high above the gunwale. A ceiling was fitted on the frames in order to prevent the cargo from resting directly on the outer planks, and for keeping it clear of the bilge water. No heavy load could safely be placed directly on the bottom planks, since their connection to the frames, if of the same character as in the Gokstad ship, was too weak for this purpose. On the other hand, as long as there was no direct load on the planks from the inside, there could be no great stress on the ties connecting the planks to the frames, since the external pressure of the water would force the planks against the frames. Sometimes the decks forward and aft were raised, and a deck was laid on the low-lying beams amidships, on which, in such cases, the cargo was stowed. The cargo was covered with skins or some other substitute for tarpaulins, which were tied around it. The mode of construction of the hull, with the exceptions here noted, was essentially the same as in the warships.

As in the longships, the sail in the trading-ships was square, but generally the mast was higher and the sail larger. The mast always remained in place. The sail was often of frieze, but in high-class vessels it was probably of canvas. Sometimes the sail was decorated with stripes of different colors, a feature quite common in warships. The general appearance of trading-ships was probably very much

like that of the so-called "Northland" boats (*Nordlandsjægter*), now used in the northern part of Norway. Generally they were supplied with one large boat, called the "after-boat," because it was often towed behind the ship, but during long sea voyages this boat was placed on top of the cargo aft of the mast. Frequently a smaller boat was carried in addition to the after-boat.

The crew in trading-ships consisted usually of only ten to twelve men, but sometimes it was more numerous. On the exploring expeditions to Vinland there must have been about fifty men on board one ship in some cases.

The seagoing capacity of these vessels was hardly inferior to that of later sailing-vessels of much larger size. Their great beam, their flat bottom, and their extremely light construction made them follow the wave slope without any accumulation of rolling. They would rise readily to the waves and be little liable to ship great quantities of water under ordinary conditions of wind and sea. When they were not in use, they were generally drawn ashore on rollers and placed in a shed.

The vessels used in the Vinland voyages during the early prosperous times of the Greenland colony were probably somewhat larger in general than the Gokstad ship, and may in several cases have been of about fifty tons displacement. This would give a cargo-carrying capacity of some fifteen tons, or about thirty-three thousand pounds. On this weight there could be carried a crew of some forty to fifty men with provisions for about four weeks, besides live cattle with feed, tools, weapons, effects, etc., as was necessary for expeditions like those to Vinland.

Due to the general decline of the Greenland settlements

By courtesy of A/S. Abel, Kristiania

Nordlandsjægt

This type of vessel resembles most nearly the old type of trading-ship

in the centuries following the early colonization, and also to the difficulties of obtaining timber and iron for the construction of ships in Greenland, which difficulties increased with the decline of trade, it is likely that the vessels possessed by the Greenlanders during the thirteenth, fourteenth, and fifteenth centuries were fewer in number, smaller, and of less perfect construction than those used in the Vinland voyages, which took place at the beginning of the eleventh century. Thus we learn that in 1189 a ship with fourteen men that came to Iceland from Greenland was fastened almost entirely by tree-nails and held together by cords, probably made from sinews or hides. Another ship, which is reported to have sailed to Markland as late as 1347, was not as large as the small Icelandic trading-vessels.

CHAPTER IV

THE NAVIGATION OF THE NORSEMEN

THE ships of the Norsemen, having both sail and oar power, were really in a far better position in certain respects than the much larger sailing-vessels of later days, the propulsion of which was entirely dependent on the wind. The longships of the Norsemen were, in fact, much on the same footing as the modern fishing-cutter provided with some form of auxiliary motor. The Norse merchant ships suffered a disadvantage from their smaller number of oars; but these oars, nevertheless, enabled them to navigate with impunity near land under circumstances where modern sailing-ships would be exposed to great danger. The square rig would hardly permit much beating up against the wind, although it is likely that these vessels could sail with the wind somewhat forward of the beam. It appears that a boom with sheet was often used in such cases.

It is of interest to examine what distance should be reckoned for a day's (*dægr*) sail, so often referred to in the sagas. Evidently, this was the way in which distances on the sea were indicated, for nowhere do we find distances given as such; they are indicated either by so many days' sail or so many days' rowing.

In the old sailing directions for voyages between Norway, Iceland, and Greenland, as given in *Landnáma Book*, we find the following statements: "From Stad in Norway is seven days' sail to Horn [Eystrahorn] on the east coast of Iceland." Stad is at the mouth of Nordfiord, and Horn is the southeastern cape of Iceland. The distance between these points is about five hundred and sixty miles, which

gives a rate of eighty miles per day. "From Snæfellsness in Iceland to the nearest point of Greenland is four days' sail across the sea to the westward." The distance from Snæfellsness to Dan Cape (Kalerajuek) is three hundred and thirty miles, which gives eighty-three miles per day. "From Langaness in northern Iceland there are four days' sail northward to Svalbarði in the sea-bay." By the term "sea-bay" (*hafsbotn*) is here meant the Arctic Sea between Greenland and Norway, for it was thought that Greenland was connected with and extended from northern Europe or Asia. (See Björnbo's map of the world in Chapter V.) Whether we take Svalbarði to mean Jan Mayen, or Cape Brewster on the coast of Greenland, we have a distance from Cape Langaness of about two hundred and eighty-five miles, which gives a day's sail equal to seventy-one miles. These statements give the location of Iceland relative to the nearest land to the east, west, and north. The number of days' sail southward to Ireland is also given, but as the statements on this point differ in various manuscripts (five days and three days), they will not here be used. In the *Saga of Olaf the Saint*, it is told that Thorarin Nefjolfsson, in the year 1024, sailed from Möre in Norway to Eyrar (the present Eyrarbakki) in Iceland in eight days. The distance between these points being seven hundred and fifty miles, he must have made ninety-four miles a day. This was related, however, as an exceptional and extraordinary achievement.

In order to determine the speed of the ships, we must examine the meaning of the word "day," which is a translation of *dægr* in the Icelandic text. We know positively that the *dægr* on Thorarin's voyage, referred to above, was

only twelve hours, and it is clearly so defined in *Rymbegla*. This would give a speed of 7.8 knots per hour for Thorarin's voyage, which is certainly a high average for such small ships as were used at that time, but not improbable. If we put the same interpretation upon the word *dægr* in the other cases above-mentioned, we arrive at an average speed of 6.7 knots. Even this speed is high and must correspond to very favorable conditions, but it is not unlikely that the Icelanders would use the ordinary maximum of a day's sail, about seventy-five miles, as a unit distance, since such a maximum is far more definite than the actual average of a day's sail on different voyages.

Unfortunately, the meaning of the word *dægr* is not altogether certain, for there are some cases where it is meant to comprise twenty-four hours. Thus, according to the manuscripts *AM* 194 and *AM* 281, it took seven days to sail round Iceland, and the distance was reckoned to be fourteen tilfts. This gives two tilfts, or about one hundred and twenty miles, per day. Evidently, a day of twenty-four hours is meant in this case, which gives a speed of five knots per hour.

On the whole, then, it seems reasonable to reckon a day's sail as about seventy-five miles for a *dægr* of twelve hours, and one hundred and fifty miles for a *dægr* of twenty-four hours. The maximum average speed would thus be about six and one-quarter knots per hour. Since the Norse skippers used to indicate distances by the number of days' sail, it seems quite likely that the same mode of expression was used in the accounts of the Vinland voyages. When, therefore, it is stated in these accounts that the explorers sailed a certain number of days from one point to another, such

a statement should probably not be taken literally as a measure of time, but should be understood to indicate a distance, as in the sailing directions.

The ships of the Norsemen must have been liable to rapid drifting in heavy gales. Floating, as they did, like nutshells on the water, a drift of from fifty to eighty miles in twenty-four hours must have been of frequent occurrence in heavy weather.

It appears, moreover, that the Norsemen of the eleventh and twelfth centuries did not use the compass. Directions on the sea were estimated by the sun in the daytime, and by the pole-star (*leiðarstjarna*) at night. Such determination, especially by the sun, must have been very crude, and when the sky was overcast or the weather foggy, they could have had little or no notion of the direction in which they sailed. We have no account that they used any instruments for measuring the speed of the ship. Since, moreover, they seem to have had no charts, they cannot have attempted any accurate or systematic dead-reckoning. Any combination of courses and distances, where such was attempted, was probably made by a purely mental process, but it is likely that they attained great skill in this respect. In the sagas we simply find it recorded that a ship sailed a certain number of days in a certain direction, and frequently the direction of the wind was given instead of the course.

The direction, when indicating a course, was generally given only to the nearest cardinal point; thus, a southerly direction might mean anything from SW to SE. Moreover, a confusion in the conception of the north-south direction, or perhaps rather in its naming, is traceable in several cases. In at least two cases the Icelanders placed their north

in the direction of our northeast. This might explain why the Greenlanders used the terms Eastern and Western Settlement about the two colonies, which were actually located on a line NNW–SSE.

To judge from a passage in the *Historia Norwegiæ*, the Norsemen made some use of the lead.

So far as we know, they did not attempt any accurate measurement of the height of the sun and the stars or their azimuth, but several statements in the sagas show that they were able to form a rough idea of the latitude by a crude observation of the heavenly bodies, the significance of which they in any case appreciated. Thus, in the description of Leif's voyage in the *Grænlendinga þáttr*, we find a remark which plainly shows that the Norsemen realized that a connection existed between the latitude and the azimuth of the sun at sunrise and sunset. This observation, and the terms *eyktarstaðr* and *dagmálastaðr*, which occur in connection with it, will be discussed in a later chapter. It was recorded on the same voyage that night and day were in Vinland more nearly of equal length than was the case in Greenland and Iceland. We have already mentioned the crude observation of the sun's altitude which was made on the remarkable voyage of exploration to the northern part of Baffin Bay, undertaken by the Norsemen in 1266.

It seems certain that the Norsemen were entirely without means of determining the longitude by astronomical observations. We know from the sagas that in many cases ships drifted about on the ocean for several months, and under such circumstances it is clear that whatever dead-reckoning may have been attempted would soon become quite confused and useless, as would, for that matter, have been the

case even had they possessed our modern means of determining and recording courses and distances. Hence, while the Norsemen may have had some crude idea of latitude, they could have had no notion of whether they were in the western or the eastern part of the Atlantic Ocean. Occasionally they might obtain some guidance in this respect from the appearance of certain birds, the presence of ice, or perhaps the color and temperature of the water.

If the Norsemen were thus poorly equipped for navigating on the high sea, they were the better fitted for navigating along the coasts. As has been explained above, their ships could, without great danger, approach the land; by their shallow draft they would generally avoid sunken dangers, and their oar-power enabled them to explore the fiords and bays without difficulty, and to seek shelter or go to sea when on a lee shore. In the exploration of unknown regions the Norsemen would, therefore, naturally prefer coastwise navigation wherever possible. As soon, however, as a knowledge of courses and distances had been acquired, they would not hesitate to sail across the sea. In fact, as pointed out by Nansen,* the Norsemen are the first on record in the history of the world to sail out deliberately on the open ocean. They went first from Denmark and Norway to England and Scotland, then from Norway to Iceland, from Iceland to Greenland, until finally they achieved crossing the ocean directly from Norway to Greenland four or five centuries before such a feat was accomplished by any other people. The first voyage of this nature of which we have any knowledge is that of Leif, who, probably in the year 1000, sailed from Norway to Greenland, on which voyage it appears

In Northern Mists, New York, 1911, II, 233.

that he incidentally touched on the coast of America. During the following centuries the direct navigation between Norway and Greenland, although always considered as difficult and dangerous, became firmly established, and crude sailing directions were developed. Thus we find in *Hauk's Book* the following directions: "From Hernar [near Bergen] in Norway sail due West to Hvarf [near Cape Farewell] in Greenland, and then you will sail north of Hetland [Shetland], still so that you can just see it in clear weather; but south of the Faroe Islands, so that only half the height of the mountains are visible above the sea [horizon]; but go south of Iceland so [*i.e.*, so near] that birds and whales are seen."

Ordinarily, the navigation of the Norsemen depended on the presence of men who, having made the voyage previously, knew the waters and the coasts in question. In other words, the navigation was based on the pilot system, which under these circumstances, in the absence of charts, detailed and accurate sailing directions, and all instruments of navigation, must have been developed to a high degree of perfection. The quality which must be particularly attained in pilots is, next to a familiarity with seamanship in general, an intimate knowledge of the seas and coasts within their region of pilotage. Pilots must know the shoals, rocks, and other dangers of the coast; they must know the tides and currents, the climatic conditions, when and where to expect fogs and ice; and they must possess or develop a special aptitude for remembering and recognizing the general contours of the land and its topographical features. Though pilots are still found everywhere, they are now mostly limited in their work to certain localities; if sometimes they act

over greater districts and seas, they are called "coasting pilots." In old Norse times such men may not have made pilotage their profession, as is now the case, but their services would nevertheless have been necessary and much sought after. Thus when Bjarni (*FB*) was about to sail from Iceland to Greenland, he said to his men: "Unwise may our voyage appear, since none of us have been in the Greenland Sea before."

The presence on Karlsefni's expedition (*ER*) of Thorhall Hunter points in the same direction. Thorhall, we are told, was well acquainted with the unsettled regions (*úbygðir*), which term in this case probably refers to the northern parts of West-Greenland, but perhaps also to Helluland. Thorhall was evidently a Nordrseta-man, familiar with dangerous navigation in unknown regions, and, as described later, Karlsefni's expedition sailed first to the Western Settlement and thence to Bjarneyar before it set out for the voyage across Davis Strait.

It seems likely that in the voyages of the Norsemen to America, after its coasts had been first accidentally discovered, the leaders of the expeditions would always try to obtain very accurate descriptions and directions from earlier travellers, and, if possible, secure men from the ship-crews that had previously visited the new land. Thus we see in the *Grænlendinga þáttr* that Thorvald, before his departure, consulted with Leif about the voyage.

In judging of the possible and probable achievements of the Norsemen as explorers, we must bear in mind that the primitiveness of their resources as navigators was counterbalanced by their enterprising spirit, their boldness, and their extraordinary endurance, qualities which were com-

bined with a natural aptitude, developed through centuries, for life on the sea.

We conclude this chapter with a brief abstract from the *Flóamanna Saga*,* which deals with the life of a famous Icelander, Thorgils Orrabeinsfóstri, and we shall, in particular, describe some of Thorgils's voyages, which took place from 998 to 1005. These voyages give a vivid idea of the dangers and hardships of ocean navigation, and especially the navigation to Greenland, in early days. Like many other Icelanders, Thorgils had been a viking during a certain period of his youth. He did not, however, molest peaceful farmers or merchants, but on the contrary fought and destroyed many of the rovers who then harried the coasts. In fact, Thorgils all through his life was the enemy of violence and injustice, and the protector of the weak.

At the time when the tale begins, Thorgils had lived quietly in Iceland for thirteen years, and had adopted the Christian faith. He then received and accepted an invitation from his old friend Eric the Red to go and settle in Greenland. He bought a ship and sailed from Faxafiord with a fair wind, probably in the year 998. On board the ship were Thorgils's wife Thorey, several other freemen and women, and a number of thralls, in all twenty-two persons. The ship also carried live stock of various kinds.

Soon after they left Iceland, the wind changed, they had much heavy weather, and drifted about on the sea for several months. They ran short of food and drink. About the middle of October they stranded on the east coast of Greenland in a sandy bay. The ship broke in two in the middle, but the crew and the cargo as well as the boat were saved.

* *GHM*, II.

Huge glaciers projected on each side of the bay and dense masses of ice drifted past the outside, ordinarily barring the entrance.

The shipwrecked people built a large hut and made preparations for the winter. They had a little flour left, but otherwise no provisions. Most of their live stock soon died and they had to live on seals. Early in the winter Thorey gave birth to a boy, who was given the name of Thorfinn. Thorey suffered much and was not properly nourished by the food that could be provided for her. During the winter Thorgils found it difficult to control the men, who were noisy and unruly. Sickness carried away one man after another, and there were many outbreaks of insanity. The condition was much aggravated by superstition, which made them feel haunted by ghosts. Once they heard a loud knocking on the door. One of the men said: "Now we shall hear good news," and went outside, but he at once became raving mad and died in the morning. The next evening another of the men became insane; he said he saw the one who had just died running towards him. About Christmas six men died, and by the beginning of March only a small number survived. The ghosts haunted them worse than ever, and specially afflicted Thorgils. Finally, he bade his men dig up and burn all the dead bodies previously buried in the sand, whereupon the apparitions ceased.

Next summer they obtained a great deal of food, but the ice prevented all attempts at leaving. The second winter passed, spring came, and there was still no chance to escape. Thorey was in bed most of the time, suffering much, but suckling the child. One day, when the weather was fair, Thorgils said he would go up on the glaciers to see whether

the ice had commenced to break. Thorey objected to his leaving her, but he answered that he would not go very far; the thralls would go out fishing, and Thorarin, a trusted servant, would stay with her. The other freemen, Thorleif, Kol, and Starkad, asked permission to go with Thorgils, but he remarked that there would not then be sufficient defence for the house, since the thralls were not to be relied upon. Still, they all went up on the glaciers. On their return in the afternoon a storm arose and they were delayed. They came to the house, but did not see the boat. On entering, they found that the men had departed with all the chests. Then said Thorgils: "Something evil has happened here;" but when they went farther into the house they heard a rattling sound from Thorey's bed, and coming nearer they saw that she was dead and that the child was nursing at the breast of his dead mother. On closer examination they found that under one of her arms there was a small deep wound, which seemed to have been produced with the point of a knife, and everything around the wound was soaked in blood. This sight almost broke the heart of Thorgils, and gave him the greatest sorrow he had ever suffered. All the provisions were gone. During the night Thorgils would watch over the child, although he admitted that he did not see how the child could be kept alive, and yet, he said, "It would be hard for me if I could not save the boy. Now, I will first try to cut one of the glands in my breast." This was done and he nursed the child. At first blood came out, then a mixed fluid, but they did not stop till milk issued, by which the child was nourished.

Thorgils and the three men that were left now set to work to build a skin-boat on frames of wood, and finally

succeeded in getting away. They reached a point farther south on the coast, where they spent the following winter.

Gradually, and under incredible hardships, they worked their way down the coast, past the walls of glaciers, and across the ice-laden fiords. On several occasions they met Eskimos, whom they took to be supernatural beings. One morning, after having spent the night in a tent on the beach, they found that the boat had disappeared, probably having been stolen by the Eskimos. One after another of the men went out of the tent, discovered that the boat was gone, but returned without saying anything about it to Thorgils. At last Thorgils himself went out and found the boat missing. He exclaimed in despair: "I see now no help for it but that the boy must be killed." The other men protested, and said that he would bitterly regret it if it was done, but he ordered them to take the child outside and kill him. They departed, but did not carry out the order; they thought that Thorgils would soon change his mind, and that it would then cause him the greatest sorrow if they had killed the boy. After a while they returned, leaving the boy outside. Thorgils asked them if they had done away with him, but they said that they had not. Then Thorgils thanked them most heartily; the boy was brought back, and he remained with Thorgils during the night. Later the Eskimos returned the boat and Thorgils and his men sailed away.

On another occasion they were brought to the utmost straits for lack of drinking-water. Finally, after many adventures, they reached the Eastern Settlement, four years after they had sailed from Iceland.

The account of Thorgils's stay in Greenland, how he fought some vikings who at that time harried the coast,

and how he captured their ships, is most interesting, but is outside the scope of this work. We shall here mention only one episode. During the winter a bear preyed upon the cattle of the colony and did much damage. One day Thorgils was in a storehouse trading with some men. Thorfinn was with him. He said: "Father! there is a big, beautiful dog outside." Thorgils replied: "Don't mind that, but stay within." In spite of his father's warning, however, he ran out, and the bear at once sprang at him and threw him down. Hearing screams, Thorgils rushed from the house with his sword and found the animal playing with the boy. Thorgils struck it between the ears and cleft its head, so that it fell dead. He grasped the child, who had suffered no serious injury. For this deed Thorgils was much honored, but Eric the Red did not approve of it, because, being a heathen, he paid to the bear a sort of cult. On the whole, Thorgils did not get on well with his former friend Eric. He abandoned the idea of settling in Greenland, and sailed away the next spring after his arrival at the Eastern Settlement. The wind carried them to the west coast of Ireland, where they spent the winter. The next fall, after a long and hard voyage, they reached Halogaland, in the northern part of Norway. Here the keel of the ship broke and was lost. The ship was repaired, and, after another adventure in which Thorgils killed a dangerous highwayman, he again went to sea, bound for Iceland.

They had heavy weather but favorable winds until they came within sight of Iceland. Then a severe northerly gale, which lasted twelve days, drove them southward, whereupon a heavy gale from the south drove them back again towards the coast of Iceland. Thorgils now wished to take in

the sail; he had worked two days bailing the sea-water, as eight great waves had broken over the ship. One of the men offered to take his turn at bailing, when the ninth wave, the largest of all, went over the ship. It hurled Thorgils off the beam nearest the bail compartment, tore Thorfinn away from his lap, and carried the child overboard. Then said Thorgils: "Now the wave has passed over us, which makes it needless to bail any more." But the wave carried the boy back into the ship; he was still alive and said: "Now the combers are getting to be rather heavy, father!" Thorgils said: "Now, bail, whoever can!" So they did, and soon all the water was bailed out of the ship. But that same day the boy began to throw up blood, and two days after he died. Then they saw land, and soon put into port at Arnarbæli in Iceland.

For four days Thorgils took neither food nor rest; he said he could not blame the women when they loved the children whom they had nursed better than any one else. Thorgils would not part with the dead body of his son, and would not allow it to be buried, but by a ruse his friends made him leave the body for a while, pretending that his stepfather needed his assistance in a quarrel. Thorgils's friends now brought the dead body to the churchyard, where they buried it. At first Thorgils was very angry, but soon became reconciled. He then went back to his estate at Tradarholt, and there he remained.

CHAPTER V

THE ACCOUNTS OF THE VINLAND VOYAGES

THE object of this chapter is, first to present a connected account of the voyages, and second to afford a basis for a critical investigation and comparison of the sources, and for a discussion of the views advanced by various writers.

The earliest reference to Vinland is found in Adam of Bremen's *Descriptio Insularum Aquilonis*, often referred to as *Liber de Situ Daniæ*. This reference is brief, but coming from a source which is entirely independent of the Icelandic sagas, and dating from less than one hundred years after the occurrence of the events which it mentions, it possesses great historic interest. Adam occupied a position under the Archbishop of Bremen and Hamburg, who at that time, about 1070, was the spiritual head of the Scandinavian countries. Adam received his information about Vinland during a visit to the court of the Danish King, Svend Estridson. The passage of his work which is of interest in this connection is here given in full.

"Besides Iceland, there are many other islands in the great ocean, of which Greenland is not the smallest; it lies farther away in the ocean. To this island it is said that one can sail from the coast of the Normans [*i.e.*, Norway] in from five to seven days. It is said that Christianity has recently spread to them. Moreover he [the King of Denmark] said that an island had been found by many in this ocean, which has been called *Vinland*, because there vines grow wild and bear good grapes. Moreover, that there is self-sown grain in abundance, we learned, not from mythical tales, but from reliable accounts of the Danes. Beyond this

island, said he [the King], no habitable land is found. But all beyond is full of dreadful masses of ice and boundless fog. About this Marcianus has said: 'One day's sail beyond Thule the sea is frozen solid.' This was verified recently by the very experienced King of the Norwegians, Harald [Haardraade]. When with his ships he explored the borders of the northern ocean, he turned back when the boundaries were lost in fogs before the entrance to the end of the world, and he escaped with the utmost difficulty the immense gulf of the abyss."

The *Islendinga Book*, written by Ari Frode about 1130, contains the earliest mention of Vinland in Icelandic literature. The passage* is of great interest and importance, since the source of information was Ari's uncle, Thorkel Gellisson, who lived in the second half of the eleventh century, and who "remembered far back."

"That country, which is called Greenland, was discovered and settled from Iceland. Eric the Red was the name of the man from Breiðifiord, who went from here thither, and took possession of that land, which has since been called Ericsfiord. He gave a name to the country, and called it Greenland, and said that it would encourage people to go there if the country had a good name. They found there, both east and west in the country, the dwellings of men, and fragments of boats, and stone implements, from which it can be seen that that kind of people had been there who occupied (*hefir bygt*) *Vinland*, whom the Greenlanders call Skrælings. And this was, when he commenced to settle in the country, fourteen or fifteen winters before Christianity was introduced here in Iceland, according to what Thorkel

* *GHM*, I, 168.

Gellisson was told in Greenland [by a man] who himself accompanied Eric thither."

In the oldest text of *Landnáma Book*, we find an account of an Icelandic chieftain, Ari Marsson: "He was driven across the sea by heavy gales to *Hvitramannaland*, which by some is called 'Great Ireland.' It lies westward in the sea near *Vinland the Good*. It is said that one can sail thither in six days. Ari could not escape thence, and was baptized there. This was first told by Hrafn Hlymreksfari, who had been long himself in Hlymrek [Limerick] in Ireland. Thorkel Gellisson stated also that Icelanders had told, according to what they had heard from Thorfinn, Earl of the Orkneys, that Ari had been seen and recognized in *Hvitramannaland*, from which he was not allowed to depart, but that he was otherwise held in great esteem there."

In the long *Saga of Olaf Tryggvason*, which is based on Gunnlaugr Leifsson's *Olaf's Saga* written about the year 1200,* we read:

"That same summer the King [Olaf Tryggvason] sent Gizur and Hjalti to Iceland, as has already been written. At that time he also sent Leif Ericsson to Greenland to preach Christianity there. The King sent with him a priest and some other holy men to baptize the people there, and to teach them the true faith. Leif went to Greenland that same summer. He took on the sea [on board his vessel] a ship's crew, who were at that time in great distress and were lying on a completely broken wreck, *and on that same voyage he found Vinland the Good.*† He arrived in Greenland late in the summer, and went home to Brattahlid to his father Eric. People afterwards called him Leif the Lucky, but his father Eric

* *GHM*, II, 224-227. † Italicized by the author.

said that Leif's having rescued a ship's crew and restored the men to life might be balanced against the fact that he had brought the impostor (*skemanninn*), as he called the priest, to Greenland. Nevertheless, through Leif's advice and persuasion, Eric was baptized, and all of the people of Greenland."

In *Kristni Saga*,* which dates from the thirteenth century, we read: "That summer King Olaf went abroad and south to Vendland. Then he also sent Leif Ericsson to Greenland to preach Christianity there. Then Leif found *Vinland the Good*. He also found men on a shipwreck. Therefore, he was called Leif the Lucky."

In the *Saga of Olaf Tryggvason* in *Heimskringla*,† Snorri writes: "That same winter [999–1000] Leif, a son of Eric the Red, was with King Olaf, in high esteem, and had adopted Christianity. But that summer, when Gizur went to Iceland, King Olaf sent Leif to Greenland in order to preach Christianity there, and he departed thence at once. He found men on a shipwreck in the sea and saved them. Then he discovered also *Vinland the Good*, and came in the fall to Greenland; he had brought with him a priest and other learned men (*kennimenn*), and went to Brattahlid, to his father Eric, in order to live there. Thereafter people called him Leif the Lucky. But his father Eric then said that one would balance the other, that he had saved a ship's crew in distress, and that he had brought the impostor (*skemanninn*) to Greenland, by whom he meant the priest."

In the Arnamagnæan collection in Copenhagen is found a manuscript, *AM* 194, probably dating from the end of the fourteenth century, which contains a geographical descrip-

* *GHM*, II, 232. † *Ibid.*, II, 230.

tion. The part here quoted is believed to be due to Abbot Nicolas of Thingeyri, who died in 1159:*

"South of Greenland is Helluland; then comes Markland; then it is not far to *Vinland the Good*, which some think extends from Africa; and if this be so, the outer ocean must separate Vinland and Markland. It is told that Thorfinn Karlsefni cut wood for a house ornament, and later went to find *Vinland the Good*, and came where they thought this land should be, but they did not get time to explore it, and obtained none of the good things of the land. Leif the Lucky first found *Vinland*, and then he found some merchants in distress on the sea, and by God's mercy he saved their lives, and he introduced Christianity into Greenland, and it spread, so that a bishop's see was established at the place called Garðar."

In the *Eyrbyggja Saga*, written down about 1250, occurs the following paragraph† concerning some of the partners in an expedition to Vinland with Karlsefni, described hereafter (*ER*):

"After peace had been concluded between the Eyrbyggja men and the Alptafiord men, Thorbrand's sons Snorri and Thorleif Kimbe went to Greenland. From the latter Kimbavogr in Greenland takes its name; it lies between glaciers. Thorleif settled in Greenland and lived there till old age, but Snorri went with Karlsefni to *Vinland the Good*. They fought with the Skrælings there in Vinland. There fell Thorbrand, Snorri's son, one of the bravest of men." The account of Björn Asbrandson's adventures, given in *Eyrbyggja Saga*, is here omitted, being considered of little or no historic value so far as it concerns the discovery of America.

* *GHM*, III, 220. † *Ibid.*, I, 717.

In the *Grettir's Saga*,* written down about 1290, are two references to an Icelander, Thorhall Gamlason, who, as will be seen hereafter, likewise took part in Karlsefni's expedition to Vinland (*ER*), whereafter he was given the surname *Vinlendingr*, spelled somewhat differently in the saga. These passages are as follows:

"Rannveig was the name of another daughter of Asmund; she married Gamli, the son of Thorhall *Vindlendingr;* they lived in Melar in Hrutafiord."

"Thorir was the name of a man, the son of Thorkel in Bordeyri. Thorir lived first at Melar in Hrutafiord. His daughter was Helga, who married Sleitu-Helgi. After the fight at Fagrabrekka, Thorir moved south to Haukadal and lived at Skard, but sold the land at Melar to Thorhall Gamlason *Vinðlendingr*. His son was Gamli, he married Rannveig, daughter of Asmund the Grey-haired ('Longhoary') sister of Grettir."

Detailed accounts of the Vinland voyages are found only in the *Saga of Eric the Red*, dating from the thirteenth century, and in the *Flatey Book*, from the fourteenth century. The abstract of these two accounts, which now follows, is in general a complete translation, only those parts being omitted which do not directly concern the voyages. The translation keeps close to the Icelandic text, and is verbally exact in all cases where that is believed to be necessary for our later critical discussion.† Variants to the text are given only when necessitated by the following discussion.

* *Grettis Saga asmundarsonar*, ed. R. C. Boer, Halle, 1900, pp. 39, 114.

† For a complete translation of these accounts into English, the reader is referred to the work of Reeves, *The Finding of Wineland the Good.*

FROM THE FLATEY BOOK

The *Flatey Book** is found in the Royal Library in Copenhagen. It contains a collection of the sagas of Norwegian kings, and several poems and shorter tales about events in and out of Norway, together with annals. It was composed during the years from 1387 to 1395, partly by the priest Jón Þórdarson, who wrote the account here given. The first passage about Leif, as well as the account of Bjarni's voyage, are found under the heading "Story of Eric the Red." †

Leif the Lucky is Baptized ‡

When sixteen winters had passed after the time when Eric the Red went over to settle Greenland, then Eric's son Leif went from Greenland to Norway; he arrived in Trondhjem [district] the same fall that King Olaf Tryggvason came from the north, from Halogaland. Leif went with his ship to Nidaros (the city of Trondhjem), and went at once to King Olaf. The King preached the faith for Leif as for other heathens who came to him. It was easy for the King to influence Leif, who was christened together with all his men. Leif spent the winter with the King and was well treated.

Bjarni's Voyage §

Bjarni was a young, promising, and successful merchant. He owned his own ship and traded in foreign lands. He used to spend every second winter with his father, Herjulf, in Iceland, but the last winter that Bjarni was in Norway Herjulf prepared to go to Greenland with Eric the Red.

*Ed. Vigfusson and Unger, Kristiania, 1860-68; cf. *GHM.*

† *Flateyjarbók*, pp. 429-432.

‡ *GHM*, I, 206. § *Ibid.*, I, 208.

Upon the ship with Herjulf was a Christian man from the Hebrides. He composed the *Hafgerðinga Drápa*, which contains this stave:

> "My voyage to the Meek One,
> Monk-heart-searcher [Christ], I commit now;
> The Lord of Heaven shall hold the hawk's seat [the hand]
> Over me forever!"

Herjulf settled in Herjulfness in Greenland and was a very distinguished man. When Bjarni came to Eyrar in Iceland in the summer, he learned that his father had already gone in the spring to settle in Greenland.

Bjarni now determined not to unload his ship, and when his men asked him what he was going to do, he answered that he intended as usual to spend the winter with his father, and "I will," he said, "go to Greenland with my ship, if you are willing to go with me." They all said that they were ready to do as he advised, whereupon he said: "Unwise may our voyage appear, since none of us have been in the Greenland Sea before." Nevertheless, they sailed out on the sea as soon as they were ready, and sailed for three days, until the land disappeared under the water; but then they got a calm and thereafter they got northerly winds and fogs. They did not know where they were, and so it went on for many days. Finally, they saw the sun again, and they could tell the directions; they hoisted their sail and sailed that day, before they saw land. Bjarni did not think that this land was Greenland; they sailed close up to the land and saw that it had no mountains, and that it was covered with woods and had low hills. They left the land on their port side, and let the sheet turn towards the land. After that (*síðan*) they sailed two days, before they saw a second land. Bjarni did not be-

lieve this land to be Greenland either, since there were said to be great glaciers in Greenland. They soon approached this land and saw that it was flat and wooded. Then they were becalmed, and the crew thought it most advisable to land, but Bjarni refused. The men pretended that they lacked both fuel and water. Bjarni said: "You do not lack any of these things;" but he was blamed for this by his men. They hoisted the sail, turned the stern from the shore, and sailed out on the open sea with a southwesterly wind for three days. Then they saw a third land, and this land was high, covered with mountains and glaciers. The men asked if Bjarni would land here, but he said that he would not, "for this land does not appear to me to be good to live in." Hence they did not lower their sail, but kept going along the coast, and saw that it was an island. They turned again the stern to the land, and sailed out on the sea with the same wind; but the wind increased in strength, and Bjarni ordered that the sail should be shortened, and they should not sail harder than their ship and rigging could stand. They now sailed on for four days, when they sighted a distant land. The men asked Bjarni if he thought this was Greenland or not. Bjarni said: "This is most like Greenland, according to what I have been told of it, and here we will steer to the land." They did so, and landed in the evening on a headland (*ness*) where there was a boat. On this headland lived Bjarni's father, Herjulf; from whom it was given the name Herjulfness. Bjarni went now to his father, gave up sailing, and remained with his father during the latter's lifetime, and lived there afterwards.

Leif's Voyage from Norway to Greenland

The account of this voyage is inserted in the *Saga of Olaf Tryggvason*,* and is entirely disconnected from Bjarni's voyage, which is found earlier in the *Flatey Book*, as well as from the *Grænlendinga þáttr*, which is found later. The passage is practically identical with that given in the long *Saga of Olaf Tryggvason* quoted above, except that the sentence, "and on that same voyage he found *Vinland the Good*," is here omitted.

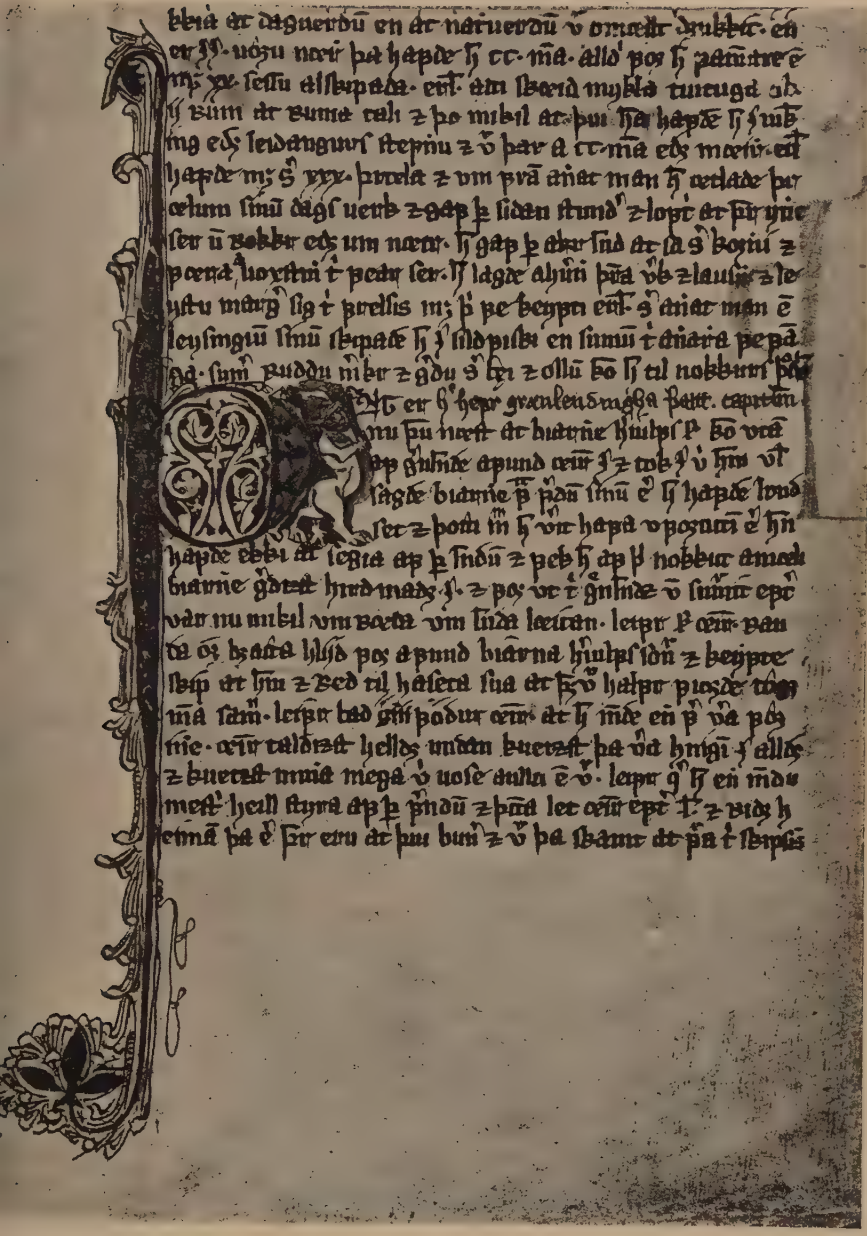
Leif Ericsson's Voyage of Exploration to Vinland

The following account of the whole series of the Vinland voyages is inserted in the *Flatey Book* in the *Saga of Earl Eric*.†

Here begins Grænlendinga þáttr

It is now next to this‡ that Bjarni Herjulfsson came from Greenland [to Norway] and visited Earl Eric, and the Earl received him well. Bjarni told about his voyages and about his discovery of unknown lands. People thought he had not been keen, as he had nothing to tell about these lands, and for this he was blamed. Bjarni became a yeoman (*hirðmaðr*) of the earl, and returned to Greenland the following summer. There was now much talk of explorations. Leif, a son of Eric the Red, from Brattahlid, went to Bjarni Herjulfsson, bought his ship, and hired a crew for it, so that they were in all thirty-five men. Leif vainly attempted to make his father join the expedition.§ On the expedition was a German, by name Tyrker. After having fitted out the ship

* *Flateyjarbók*, p. 448.
† *Ibid.*, pp. 538-549; *GHM*, I, 214.
‡ *Þat er nú þessu næst.*
§ This event is described at length in the saga.



First Page of the Grænlendinga þáttr

for the voyage, they sailed out on the sea, and found first the land which Bjarni had seen last. They sailed to the land, anchored, put out the boat, and went ashore. No grass grew there, and great glaciers were seen inland, while the coast between the glaciers and the sea looked like one large, flat stone,* and this land did not seem to them to have any value. Then said Leif: "Now it has gone better with us than with Bjarni, who came here and did not go ashore; now I will give this land a name and call it Helluland."

After that they went on board the ship, sailed out on the sea, and found another land. They sailed again to the land, anchored, put out the boat, and went ashore. This land was flat and covered with woods, and there were extensive white sands, wherever they went, and the beach was not steep.† Then said Leif: "This land shall be named according to its nature and it shall be called Markland." After that they went as soon as possible to the ship, and sailed out on the open sea with a northeast wind, and were on the sea two days before they saw land. They went ashore on an island to the north of the land. It was fine weather. They looked round and noticed that there was dew on the grass. This dew was found to have a very sweet taste. After that they went on board the ship and sailed into the sound between the island and a cape which stretched northward from the coast, and steered westward past the cape. The water was so shallow there that the ship ran aground and stood dry at ebb-tide; the sea was then visible only at a great distance. But Leif and his men were so anxious to get ashore that they did not care to wait till the water rose again under their

* *En sem ein hella væri allt til jöklanna frá sjónum.*

† *Ok sandar hvítir víða, þar sem þeir fóru, ok ósæbratt.*

ship, and they ran ashore at once where a river flowed out from a lake. At next high tide they took the boat, pulled to the ship, and took it up through the river into the lake, anchored, and carried their leather bags ashore. They first built wooden huts (sheds), but later they decided to prepare to remain there during the winter, and they built then large houses.

Salmon, larger than they had seen before, were plentiful in the river and the lake. The land seemed to them so good that there would be no need of storing fodder for the cattle for the winter; there came no frost in the winters and the grass withered but little. Day and night were there more nearly of equal length than is the case in Greenland and Iceland; the sun had there *eyktarstaðr* and *dagmálastaðr** on the shortest day of the year. When they had built the house, Leif said to his men: "Now I will divide our party into two halves and explore the land; and one half of the men shall remain at the house, while the other half shall examine the country, but shall not go farther than to let them be back in the evening, and they must never part from one another." They did so for some time, and Leif was alternately one day with the exploring party, the other day at the house. Leif was a fine, strong man, of impressive personality, and moreover intelligent and wise.

It was found one night that one of their men was missing, and that was Tyrker Southman.† Leif was much troubled by this, for Tyrker had been for a long time with him and his father, and had been very fond of Leif in his childhood. Leif now reprimanded his men severely, and pre-

* These terms are explained and discussed in Chapter XI.

† *Suðrmaðr, i.e.*, a German.

pared to go in search of him with twelve men. But when they were only a short distance from the house, they were met by Tyrker, whom they received with great joy. Leif saw at once that his foster-father was queer. Tyrker had a high forehead and restless eyes; he was freckled in the face and small of stature, but adept in all sorts of handicraft. Then Leif said to him: "Why were you so late, foster-father, and why did you part from the others?" Then at first he spoke in German for a long time, and rolled his eyes, and twisted his mouth when they did not understand what he said. After some time he spoke in the Norse tongue: "I did not go much farther, and yet I have discovered something new; I found *vínvið* and *vínber*.* "Can this be true, foster-father?" said Leif. "Certainly, this is true," said he, "for I was born where there is no lack of either *vínvið* or *vínber*." They now slept that night, but in the morning Leif said to his men: "We will now divide our labors, and each day we will either gather *vínber* or cut *vínvið* and fell trees, so as to obtain a cargo of these for my ship."† This advice was followed. It is said that their after-boat was filled with *vínber*. A cargo was now cut for the ship, and when the spring came, they made ready and sailed away, and Leif gave the land a name in accordance with its products, and called it *Vínland*.

Then they sailed out on the sea, and had a fair wind, until they sighted Greenland and the mountains below the glaciers. Then one of the men spoke up and said to Leif: "Why do you steer the ship so much into the wind?"

* These terms are discussed in a later chapter.

† *Nú skal hafa tvennar sýslur fram, ok skal sinn dag hvort, lesa vínber, eðr höggva vínvið ok fella mörkina, svâ at þat verði farmr til skips míns.*

Leif answered: "I have my mind upon my steering, but on other matters as well. Do you not see something out of the common?" They said that they did not see anything strange. "I do not know," said Leif, "whether I see a ship or a skerry." Now they discovered it, and said that it was a skerry; but he was so much keener of sight than they that he could see men on the skerry. "Now I will keep close to the wind," said Leif, "so that we can get nearer to them, in case they should need our assistance; but if they should not be peaceably disposed, we are still in a better position than they are, since we are able to do as we please." They now sailed up to the skerry, lowered their sail, anchored, and put out a second small boat, which they had brought with them. Then Tyrker asked them who was their chieftain. He said his name was Thorer, and that he was a Norwegian. "But what is your name?" Leif gave his name. "Are you son of Eric the Red, from Brattahlid?" asked he. Leif said that he was. "I will now," said Leif, "take you all on board my ship, and as much of the goods as the ship can hold." They accepted this offer, and then sailed with this cargo to Ericsfiord and up to Brattahlid, where they unloaded the ship. Then Leif invited Thorer and his wife Gudrid, together with three others, to stay with him, and procured quarters for all the other men. Leif rescued fifteen persons from the skerry; he was afterwards called Leif the Lucky (*hinn heppni*). Leif had thus gained both wealth and honor. That winter serious illness broke out in Thorer's party, and Thorer and a great many of his people died. Eric the Red died also that winter.

Now there was much talk of Leif's Vinland voyage, and his brother Thorvald thought that the land had not been suf-

ficiently explored. Then said Leif to Thorvald: "You may go with my ship, brother, if you so wish, to Vinland, but I wish to have the ship fetch first the timber which Thorer had on the skerry." And so it was done.

Thorvald's Voyage

Now Thorvald, with thirty men, prepared for this voyage, and consulted with his brother Leif about it. Thereafter they made the ship ready, and sailed out to sea; and nothing is told of their voyage before they came to Leifsbooths in Vinland. They laid up their ship there, and remained quietly during the winter, and lived by fishing. But in the spring Thorvald said that they should put their ship in order, and that some men should take the after- (large) boat and sail along the western coast (or west of the land),* and explore there during the summer. They found the country beautiful and wooded, and there was only a short distance between the woods and the sea, and there were white sands. There were many islands, and the water was very shallow. They found nowhere any human dwellings or animals, except on an island to the west, where they found a wooden shed (or screen) for the storage of grain.† They found no other trace of human work, and returned to Leifsbooths in the fall. The following summer Thorvald sailed eastward (or along the east coast) with the ship and northward along the coast (or north of the land).‡ They were struck by a heavy gale off a cape, the ship was driven ashore there, and the keel broke under the ship. They stayed there a long time

* *Fara fyrir vestan landit.* † *Kornhjálm af trè.*

‡ *En at sumri öðru fór Þorvaldr fyrir austan með kaupskipit, ok hit nyrðra fyrir landit.*

and repaired their ship. Then Thorvald said to his men: "Now we shall raise the keel here on the cape and call it Kjalarness."

Thence they sailed east of the land (or eastward along the coast),* into the mouths of the fiords in the vicinity, and to a headland which stretched out there, and which was covered all over with woods. Here they laid the ship alongside the shore and put out the gang-plank. Thorvald went ashore with all his men, and said: "Here it is beautiful, and here I should like to build my house." Then they returned to the ship, and discovered on the sands inside the headland three hillocks (*hæðir*). They went there and saw three skin-boats, and three men under each boat. Thorvald divided his crew into parties and caught all of them (the natives), except one, who escaped with his skin-boat. They killed the other eight men, and then went back to the headland, looked around, and discovered several hillocks further up the fiord, and they supposed these to be human dwellings.

They now became so sleepy that they could not keep awake, and all fell asleep. They were awakened by a loud voice, shouting, "Wake up, Thorvald, with all your men, if you will preserve your life; go on board your ship with all your men and leave the country as soon as possible."

Then came from the bottom of the fiord a countless number of skin-boats, and approached them. Thorvald said: "We shall put up the shields (or warboards) along the sides, so as to defend ourselves as well as possible, but we shall not attack." This they did, but the Skrælings shot at them for a while, and then they fled, each one as fast as he could. Thorvald then asked his men whether any of

* *Austr fyrir landit.*

them had been wounded; they said they were not wounded. "I have got a wound under my arm," said he, "for an arrow flew in between the gunwale and the shield; here is the arrow, and this will be my death. Now I give you the advice that you prepare to return as soon as possible; but you shall take me to the headland, where I thought it best to settle; it may prove true what I said, that I should stay there awhile. There you shall bury me, and place a cross at my head, and another at my feet, and the headland shall be called Crossness ever after."

Greenland was then Christianized, but yet Eric the Red died before the introduction of Christianity. Now Thorvald died, but they did all as he had told them; and went afterwards to their companions and told one another of their experiences. They remained there during that winter, and gathered *vínber* and *vínvið* for a cargo for their ship.

In the spring they made their ship ready and returned to Greenland. They came with their ship to Ericsfiord, and they could now tell Leif great news.

Thorstein's Voyage

In the meantime, Thorstein, another son of Eric the Red, had married Gudrid, after the death of her husband, Thorer, who, as told above, was shipwrecked and was saved by Leif.

Thorstein decided to go to Vinland for the body of his brother Thorvald. He fitted out the same ship for the voyage, and chose twenty-five large and strong men for a crew. Also his wife, Gudrid, went with him.

They sailed out on the open sea, out of sight of land. They drifted about on the sea all the summer, and did not

know where they went; and at the end of the first week of winter (*i.e.*, about the first of November, according to the calendar of the Icelanders) they landed in Lysufiord, in the Western Settlement.

The saga now relates in detail, and most interestingly, how Thorstein and Gudrid were very hospitably received by Thorstein Svarte in the Western Settlement, how sickness tore away many of their men, and how at last Thorstein Ericsson died. This part of the narrative is strongly colored by superstition. Gudrid went to Leif at Brattahlid the next spring.

Thorfinn Karlsefni's Voyage

The same summer a ship came to Greenland from Norway. The captain of this ship was Thorfinn Karlsefni, a man of great wealth. He spent the winter on Brattahlid with Leif Ericsson, and married Thorstein's widow, Gudrid.

There was again much talk of a Vinland voyage, and both Gudrid and others encouraged Karlsefni to undertake such an expedition. Karlsefni finally decided to go, and hired sixty men and five women for a crew; he made the contract with his men that they should have an equal share in all the goods which they might acquire. They took with them all kinds of live stock, for they intended, if possible, to settle in the new country. Karlsefni asked Leif if he would give him his houses in Vinland, but Leif answered that he would only lend them to him.

Then they sailed out on the sea with the ship, came to Leifsbooths without any mishap, and carried their bags ashore. They soon got ample food, for a big and good whale drifted ashore. They let the cattle go about on land; among

them was a bull, which became very unruly. They felled trees; and hewed timber wherewith to load the ship, and the timber was laid on the rocks to dry. They used all the riches which the land produced: *vínber*, game, and other good things.

After the first winter came the summer; then the Skrælings appeared, issuing from the woods in great numbers. Karlsefni's bull commenced to bellow very loudly, and this frightened the Skrælings. They ran, carrying with them their bundles, which contained gray fur,* sable, and other skins, and tried to escape into Karlsefni's houses; but Karlsefni bade his men defend the doors against them.

The Norsemen and the Skrælings did not understand each other's language. The Skrælings now took down their bundles, opened them, and offered their goods for sale; they wanted to get weapons, but Karlsefni forbade the sale of weapons. It now occurred to Karlsefni to let the women bring out milk-food, and this found great favor with the Skrælings. After having thus sold their goods, the Skrælings went away, carrying their wares in their stomachs, while their packs and peltries were left behind with Karlsefni and his men. Karlsefni had his men make a strong fence of palisades round his houses, and everything was put in readiness for defence. At that time Gudrid gave birth to a boy, who was called Snorri.

At the beginning of the next winter the Skrælings returned in much greater numbers and brought with them the same kind of goods as before. Karlsefni again had his women carry out milk-food, and when the Skrælings saw this, they threw their bundles over the fence. Gudrid sat in

* *Grávara*, skins of gray squirrel.

the doorway beside the cradle of her son Snorri; then came a shadow before the door, and a woman in a black skirt (*námkyrtill*) entered. She was short in stature and wore a fillet about her head; her hair was of a light brown color; her face was pale, and her eyes were larger than ever before seen in a human skull. She went up to Gudrid and said: "What is your name?" "My name is Gudrid, but what is your name?" "My name is Gudrid," said she. The housewife Gudrid motioned her with her hand to sit beside her; but then, at that very instant, it happened that Gudrid heard a great crash, and the woman disappeared, and at the same time one of the Skrælings was killed by one of Karlsefni's men, because he had tried to take their weapons. Now the Skrælings fled at once, but left their garments and bundles behind them. No one had seen this woman except Gudrid.

Karlsefni, thinking that the Skrælings would likely return a third time in greater number and as enemies, ordered ten of his men to place themselves on a certain cape (*ness*) and show themselves there, while the rest of his men were ordered to go into the woods and hew a clearing for the cattle, when the troop should approach from the forest. The bull should go in advance of the men. At the place thus chosen for the encounter there was a lake on one side and the forest on the other.

The Skrælings returned, and attacked Karlsefni's men in the position he had selected. A hard fight ensued and a great number of the Skrælings were killed. There was a fine big man among the Skrælings, whom Karlsefni thought was their chieftain. One of the Skrælings took up an axe, looked at it awhile, and struck one of his comrades, who fell down

dead at once. Then the big man seized the axe, looked at it awhile, and threw it out in the lake as far as he could. After that the Skrælings fled in disorder into the woods, and thus ended their fight.

Karlsefni and his party remained there throughout the winter, but in the spring Karlsefni announced his intention to return to Greenland. They now made ready for the voyage, and carried away with them many goods: vines (*vínviðr*), berries (*ber*), and peltries. They arrived safely at Ericsfiord, where they remained during the winter.

The following summer Karlsefni sailed to Norway,* and it was said generally that no richer ship had ever sailed from Greenland. He had a successful voyage, and remained in Norway during the winter and sold his wares. Both he and his wife were held in high honor by the most prominent men of Norway. The next spring, when he was ready to sail for Iceland, awaiting a favorable wind, there came to him a Southman (*suðrmaðr*), a native of Bremen in Saxonland, who wished to buy his house-ornament (*húsasnotra*). Karlsefni refused at first to sell it, but when he was offered half a mark in gold for it, he thought it a good offer and accordingly closed the bargain. The Southman went away with the house-ornament. Karlsefni did not know what wood it was, but it was *masur*, brought from Vinland. Now Karlsefni sailed to Iceland, where he settled and was a very prominent man; from him and his wife Gudrid descends a numerous and distinguished lineage.

*This paragraph concerning Karlsefni occurs a little farther on in the saga, but is interpolated here in order to make the account more connected. *GHM*, I, 253, 254.

Freydis's Voyage

After Karlsefni's expedition there was again much talk in Greenland of Vinland voyages, which seemed to bring both profit and honor. The same summer that Karlsefni returned from Vinland, another ship arrived in Greenland from Norway. This ship was under the command of two brothers, Helgi and Finnbogi, and they passed the winter in Greenland. These brothers were Icelanders from the east fiords.

Freydis, a daughter of Eric the Red, went from her home at Garðar to the brothers Helgi and Finnbogi and proposed that they should together undertake an expedition to Vinland and share equally with her all the goods which they might acquire on the voyage. To this they agreed, and she went thence to her brother Leif and asked him to give her his houses in Vinland, but he answered, as in former cases, that he would lend her the houses, but he would not give them to her.

The brothers and Freydis had agreed that each should have with them thirty able-bodied men, besides the women, but Freydis at once violated this compact by surreptitiously bringing five men more, who were hidden so that the brothers did not see them till they came to Vinland. It had been agreed beforehand that they should sail in company, if possible, but although they were not far apart from each other, the brothers arrived in Vinland somewhat earlier than Freydis, and carried their belongings up to Leif's houses. This at once gave rise to ill-feeling, since Freydis claimed that she alone had a right to the houses. The brothers then carried their baggage out, and built a separate house farther from the sea on the shore of the lake. Freydis let her men

fell trees with which to load her ship. Now the winter commenced to set in, and the brothers proposed that they should play games in order to pass the time. This went on well for a while, but soon the relations between the two parties became strained, and the games as well as all other intercourse between the houses ceased, and in this way things went on far into the winter. One morning early, Freydis arose from her bed, and dressed herself, but did not put on her shoes and stockings. A heavy dew had fallen. She put on her husband's cloak, and then she went to the house of the brothers and up to the door; but shortly before a man had gone out, and had left the door half open. She opened the door, and stood in the doorway for a time without saying anything; but Finnbogi, who was lying on the innermost side of the room, was awake, and said: "What do you want here, Freydis?" She answered: "I wish you to rise, and go out with me, for I want to speak with you." He did so, and they went to the trunk of a tree which was lying near the house, and sat down there. "How are you satisfied here?" said she. He answered: "I am well satisfied with the country, but I do not like the ill-feeling that has come between us, for I think there is no reason for it." "It is as you say," said she, "and so do I think; but this is my errand to you, that I wish to exchange ships with you brothers, for you have a larger ship than I, and I wish to sail away from here." "This I will grant you," said he, "if you will then be satisfied." With that they parted; she went home and Finnbogi went to his bed. She went into her bed with her cold feet, whereby Thorvard woke up, and asked why she was so cold and wet. She answered with great wrath: "I have been to the brothers in order to

buy their ship, for I wished to have a larger ship; but they took that so badly, that they struck me and handled me very roughly; but you, miserable man, will neither avenge my shame nor your own; I feel now that I am not in Greenland, and I shall part from you unless you avenge this." Thorvald could no longer stand her taunts, and he ordered his men to rise at once, and take their weapons; this they did, and went directly to the house of the brothers, which they entered, seized the sleeping people, and bound them, and led each one out when he was bound; but as they came out Freydis caused each one to be killed. Thus all the men were killed, and only the women were left, and these no one would kill. Then said Freydis: "Hand me an axe." This was done, and then she killed the five women who were there, and she did not stop till they were all dead. After this evil deed they went back to their house; and Freydis appeared to be well satisfied with what she had done, and she spoke thus to her people: "If it be ordained for us to come again to Greenland, I shall contrive the death of any man who speaks of this event; we shall say that they remained living here when we went away." In the spring they made the ship ready, which had belonged to the brothers, and loaded it with all the best goods that they could obtain and the ship could carry. They sailed off, and after a speedy voyage they came to Ericsfiord early in the summer. They here found Karlsefni about to sail for Norway and waiting for a fair wind.

Freydis went to her home, which had remained unharmed during her absence. She bestowed liberal gifts upon all of her companions, in order that they should not talk about her evil deed, but in course of time the rumor of it got abroad.

Finally, Leif heard about it and was much concerned. He seized three men of Freydis's party, put them to torture, and they all told the same tale. "I have no heart," said Leif, "to treat my sister Freydis as she deserves, but this I will predict of them, that there is little prosperity in store for their offspring." From that time on, no one thought them worthy of aught but evil.

Karlsefni has related the incidents of all these voyages, about which it has here been told, more accurately than any one else.

FROM THE SAGA OF ERIC THE RED

This saga, *Eireks Saga Rauða* (*ER*),* is preserved in two Icelandic manuscripts, the so-called *Hauk's Book* (*AM* 544), written about 1320, and a vellum codex (*AM* 557), of about a hundred years later. Both are derived from a common original, which, according to Finnur Jónsson, was probably written about 1200, and was later somewhat modified, but is now lost. Here is narrated only that part of the saga which concerns the voyages to Vinland. The translation is based on *AM* 544,† but some of the variants from *AM* 557 are included.

Eric the Red

The saga tells in detail the history of Eric the Red, and how he found and explored a new land to the west of Iceland which had formerly been discovered by one Gunnbjörn. He went to settle there and called it Greenland, because, he said, it would encourage people to go there if the land were given a good name.

*Ed. G. Storm, Copenhagen, 1891. † *GHM*, I, 352.

Thorbjörn and Gudrid

Thorbjörn Vifilson was a prominent man in Iceland, and his daughter Gudrid was a most beautiful and superior woman. For various reasons, which do not concern the Vinland voyages, Thorbjörn decided to go and join his friend Eric the Red in Greenland, and he therefore sold his land and bought a ship. He took with him thirty men, among them several good friends. When they came out on the ocean they were becalmed; they lost their way and met many difficulties during the summer. Sickness broke out among them, and some of their friends and half of the crew died. The sea became very rough and they suffered the greatest hardships in many ways; but in spite of all they reached Herjulfness in Greenland at the beginning of the winter. In the spring they went on to Eric the Red, who lived at Brattahlid in Ericsfiord. Thorbjörn was given land in Stokkaness, where he built a large farm, and where he lived afterwards.

Leif's Discovery

Eric the Red had two sons, Thorstein and Leif, both of them fine men. Leif sailed for Norway one summer and was driven out of his course to the Suder Isles (Hebrides), where he spent a long time waiting for a fair wind, and where he had a love affair with Thorgunna, a woman of high rank. In the fall he came to Norway, where he spent the winter at the court of King Olaf Tryggvason, and was well received. The King requested Leif to proclaim Christianity in Greenland, which mission he accepted after some hesitation. Next summer Leif sailed for Greenland, "and for a long time he drifted about on the ocean, and came upon lands of which he had previously no knowledge. Self-sown wheat-fields

and vines (*vínviðr*) grew there. There were also those trees which are called *masur*, and of all these they took specimens. Some trees were so large that they were used as beams in houses." Leif found some men upon a wreck and brought them home with him, and procured quarters for them all during the winter. Leif showed his generosity and energy in this and in many other ways, as when he introduced Christianity in Greenland, and was ever afterwards called Leif the Lucky. He soon preached the Christian faith in the country, and delivered to the people the message of King Olaf Tryggvason, explaining to them how much glory and splendor there was in this faith. Eric was loath to leave the old faith, but his wife Thjodhilde was soon converted, and she built a church at some distance from their home.

Thorstein's Voyage

There was now much talk of a voyage of exploration to that country which Leif had discovered, and an expedition was prepared under the leadership of Thorstein Ericsson, an able and popular man. His father Eric was persuaded to join it. They fitted out the ship in which Thorbjörn had come out. They selected twenty men, and did not carry any goods with them other than weapons and provisions. The saga here tells of an accident that happened to Eric when on his way to the ship, but this story is here omitted as foreign to the subject. The result of this accident was that Eric decided to remain at home.

They sailed from Ericsfiord in the best of spirits and full of expectation, but they were driven out of their course and drifted about on the ocean for a long time. They came in sight of Iceland, and then they saw birds from Ireland. Thus

their ship was driven hither and thither over the sea, and in the fall they returned much worn out by exposure to rough weather and exhausted by their severe labors and hardships. They arrived at Ericsfiord at the beginning of winter, and stayed at Brattahlid during the winter.

Thorstein married Gudrid, Thorbjörn's daughter, in the fall, and they went to live at Lysufiord in the Western Settlement, where he had a house together with a man of the same name. As in the corresponding narrative in the *Flatey Book*, it is now told how sickness broke out and carried away a great many people, the account being colored here, as in *Gþ*, by superstition. During the winter Thorstein Ericsson died, and the next summer his widow, Gudrid, went to live with Eric the Red, who acted as a father to her.

Thorfinn Karlsefni's Voyage

Thorfinn Karlsefni was an able seaman and merchant, and sailed one summer from Iceland to Greenland. Snorri Thorbrandsson from Alptafiord went with him, and there were forty men on board the ship. At the same time two other Icelanders, Bjarni Grimolfsson and Thorhall Gamlason, equipped another ship and sailed to Greenland; they had likewise forty men on board their ship. Both vessels arrived at Ericsfiord in the fall. The merchants traded with Eric and stayed with him at Brattahlid during the winter. Karlsefni married Gudrid, the widow of Thorstein Ericsson.

That same winter there was much talk at Brattahlid about an exploration of Vinland the Good, which country was thought to possess great natural wealth. Next spring an expedition to find the new country was fitted out. It consisted of three vessels, one under Karlsefni and Snorri, one under

Bjarni and Thorhall, and the third under Thorvard with his wife Freydis, an illegitimate daughter of Eric the Red. This last ship was the same as that in which Thorbjörn, Gudrid's father, came out to Greenland, and which had also been used by Thorstein on his voyage. In it were Eric's son Thorvald and one Thorhall, called Hunter (*veiðimaðr*), who had been for a long time with Eric, as his hunter and fisherman during the summer and as his steward during the winter. He was big and strong, swarthy, taciturn and ill-tempered, and always incited Eric to evil; he was not a good Christian; but he had a wide knowledge of the unsettled regions (*úbygðir*). There were in all one hundred and sixty men on board the ships when they sailed.

They sailed first to the Western Settlement and from there to Bjarneyar (Bear Islands). Thence they bore away southward two days (*AM* 557: Thence they bore away with a north wind, and were out two days), when they saw land, and put out the boat, and explored the land, and found there large flat stones, many of which were twelve ells wide (*AM* 557: many and so great that they were more than two men's height). There were many Arctic foxes there. They called the land Helluland (Land of Flat Stones). Then they sailed two days (*dægr*), and turned from south towards southeast, and found a land, wooded, and with many animals. An island lay off the land to the southeast; there they killed a bear, and called the island Bjarney (Bear Island), but the land was called Markland (Woodland). Thence they sailed southward along the coast for a long time, and came to a cape (*ness*); the land was on the starboard side; long strands and sands were there.* They rowed to the

* *Voru þar strandir langar ok sandar.*

shore, and on the cape they found the keel of a ship, and they called the cape Kjalarness (Keelness); and the strands were called Furdustrands (Remarkable Strands), because they were so long to sail by. Then the land became indented with bays. They steered their ships into a bay.

King Olaf Tryggvason had given to Leif two Scotch people. The man's name was Haki, and the woman's Hækja (*AM* 557: The King asked Leif to use these people, if he should stand in need of swiftness, for) they were swifter than deer. These people were on board the ship with Karlsefni (*AM* 557: Eric and Leif having tendered Karlsefni their services). When they had sailed past Furdustrands, they put the Scotch people ashore, and directed them to run to the southward, to investigate the nature of the country, and to return before the end of three days (*dægr*). The runners wore a garment, called *kiafal*, so fashioned that there was a hood at the top, and it was open at the sides, without sleeves, and was fastened between the legs with a button and a loop; but elsewhere they were naked. They stayed there and waited during that time, but when the runners came back, one of them carried in the hand a bunch of *vínber*,* and the other an ear of newly (or self-) sown wheat.† They went on board their ships and sailed on. They stood with their ships into a fiord. Outside it there was an island, round which there were strong currents; therefore they called it Straumey (Stream Island).

There were so many eider ducks (*AM* 557: birds) on the island that it was scarcely possible to walk for the eggs. They (*AM* 557: sailed through or into the fiord and) called

* *Vinberja köngul;* according to *AM* 557: *vínber.*

† *Hveitiax nýsáið*, but in *AM* 557: *hveiti sjálfsáit.*

it Straumfiord. They carried their goods ashore and prepared to stay there. They had brought with them all kinds of live stock. The country was very beautiful there. (*AM* 557: There were mountains thereabouts.) They occupied themselves exclusively with the exploration of the country, and they remained there during the winter (*AM* 557: which was very severe), without having stored a supply of food. During the summer* the fishing began to fail, and they began to get short of food. (*AM* 557: Then they went out to the island in the hope that something might be forthcoming in the way of fishing or flotsam; there was not, however, much food on the island, but their live stock fared well there.) Then Thorhall Hunter disappeared. They had previously made supplication to God that He should send them food, but it did not come as soon as they needed it. They searched for Thorhall three days, and found him on a projecting crag, where he lay, staring up at the sky, and with mouth and nostrils agape, mumbling something. They asked why he had gone there. He replied that that did not concern any one. They asked him to go home with them, and he did so. Soon after, a whale appeared; they went and cut it up, and no one knew what kind of a whale it was. When it was prepared, they ate of it and all were taken ill. Then said Thorhall: "More helpful was now the Red-Beard [Thor] than your Christ; this is my reward for the verses which I composed to Thor, the Trustworthy; seldom has he failed me." But when they heard that, they threw the whole whale into the sea and left their fate in the hands of God. Then the weather improved; they could now row out to fish, and thenceforth they had no lack of provisions,

* The words "during the summer" probably belong to the previous sentence.

for they could hunt game on the land, gather eggs on the island, and catch fish in the sea.

It is told that Thorhall Hunter wished to sail northward along Furdustrands (*AM* 557: and past Kjalarness) in order to find Vinland, but Karlsefni wished to sail southward along the coast (*AM* 547: and east of the land, believing that country to be greater which was farther to the southward, and it seemed to him more advisable to explore in both directions). Thorhall made his ship ready at the island, and they were not more than nine men all told; but all the rest of the men went with Karlsefni. But when Thorhall carried water on board his ship and drank, he recited these verses:* "The chieftain [warrior] said that when I came here, I should have the best of drinks; but it behooves me to blame this land to everybody. Here I [the warrior] am bound with my hands to carry the pail; I must stoop to the well; wine did not come on my lips." And when ready to sail, Thorhall recited this verse: "Let us return home to our countrymen; let the seaman explore the broad road of the sea, while the untiring men [warriors], who praise the land, settle and cook whales here on Furdustrands."

Then they sailed northward past Furdustrands and Kjalarness, intending to beat past (or along) the coast to the westward, but they met strong westerly winds and were driven ashore in Ireland, where, according to the account of traders, they were ill-treated and thrown into slavery, and there Thorhall lost his life.

Karlsefni, together with Snorri and Bjarni and their people, went southward along the coast. They sailed for a long

* The verses are here translated without any attempt to preserve their poetic form.

time, and came at last to a river which flowed down from the land into a lake and then into the sea. There were great beaches (*eyrar*) before the mouth of the river, and the river could not be entered except at high tide. Karlsefni and his men sailed into the mouth of the river and called the place Hóp. They found there on the shore self-sown wheat-fields on the low land, but vines (*vínviðr*) where the ground was high. Every brook there was full of fish. They dug pits on the beach at the edge of the high tide, and when the tide fell there were halibut in the pits. There were great numbers of animals of all kinds in the woods. They remained there half a month and enjoyed themselves without anything happening. They had brought their live stock with them. One morning early they observed a great number of skin-boats, and saw that staves (or rods) were brandished, and it sounded like the wind whistling in stacks of straw, and the staves were swung with the sun. Karlsefni thought this might be a sign of peace and ordered his men to display a white shield. These people rowed up to them, went ashore, and looked at the newcomers with surprise. They were swarthy men of a savage appearance and had scraggly (*illt*) hair on their heads. They had big eyes and broad cheeks. They tarried there for a time, wondering at the people they saw before them, and after that they rowed away southward around the cape.

Karlsefni and his followers built their houses (*búðir*) above the lake. Some of their dwellings (*skálar*) were near the lake, others farther away. They remained there that winter. No snow came and all of their live stock lived by grazing.

At the beginning of spring, early one morning, they observed a number of skin-boats rowed from the south round

the headland, so many that it looked as if coal had been strewn at the mouth of the harbor. Then again staves were swung on each boat. Karlsefni and his men raised their shields, and when they got together they began to barter, and these people preferred red cloth; in exchange they gave peltries and pure gray (squirrel?) skins. They also desired to buy swords and spears, but this was forbidden by Karlsefni and Snorri. For a pure gray skin the Skrælings received one span of red cloth, which they tied round their heads. So their trade went on for a time. Then the cloth began to get scarce, and the Norsemen cut it in small pieces not wider than a finger, and yet the Skrælings gave as much for it as before, or even more.

It happened that Karlsefni's bull ran out from the woods, bellowing loudly. This frightened the Skrælings; they ran to their boats and rowed away southward along the shore; after this nothing was seen of them for three whole weeks. But at the end of that time, a great number of Skræling boats came from the south, a dense stream of them; the staves were now swung against the direction of the sun (*withershins*); and the Skrælings all yelled loudly. Karlsefni and his men displayed a red shield. The Skrælings ran out of their boats, and a fight ensued. There was a fierce shower of missiles, for the Skrælings had war-slings (*valslöngur*). The Skrælings raised up on a pole a very large ball-shaped body, somewhat like a sheep's belly and bluish of color; this they hurled from the pole up on the land above Karlsefni's people, and it made a terrific sound where it fell. (According to *AM* 557, it appears that several poles with balls attached to them were thrown.) This frightened Karlsefni and all his men so much that they fled, and they

made their escape up along the river-bank, for it seemed to them that the Skrælings were rushing towards them from all sides; they did not halt till they came to some jutting rocks, where they offered a stout resistance. It is now told how Freydis came out, and, seeing that the men were fleeing, upbraided them for their cowardice. She tried to follow them, but, being at that time pregnant, she could not run so fast; still she went after them into the woods. The Skrælings pursued her. On her way she found the dead body of Thorbrand Snorrason with a flat stone in his head and his naked sword lying beside him; she took it up and prepared to defend herself. The Skrælings then reached her, whereupon she pulled out her breast from under her clothing, and struck it with the naked sword. At this the Skrælings were frightened and ran to their boats and rowed away. Karlsefni and his companions praised her valor. Two of Karlsefni's men had fallen, but a great number of the Skrælings. Karlsefni's party had here been overwhelmed by a superior number; they went home to their houses and dressed their wounds; they thought that only the men who came from the boats could have been real human beings, while those who came down upon them from the land must have been supernatural or an ocular illusion. The Skrælings, further, found a dead man, and an axe lay beside him; one of them picked up the axe and struck a tree with it; one after another tried it, and they thought it a good thing and that it cut well. Finally, one of them hewed at a stone with the axe so that it broke, whereupon they threw it away.

Karlsefni and his people now realized that, although the land was rich, they would always live in constant danger

of hostilities with the natives. They therefore determined to return to their own country, and at once prepared to leave. They sailed to the northward along the coast, and found five Skrælings, clad in coats of skin, lying asleep near the sea; they had with them boxes containing animal marrow, mixed with blood; Karlsefni and his men concluded that these people must have been banished from their own land; they killed them. Afterwards the Norsemen came to a cape, upon which there was a great number of animals; this cape was completely covered with dung, because the animals lay there at night. They now came back to Straumfiord, where they found abundance of all that they needed.

Some men say that Bjarni and Gudrid (*AM* 557: Freydis) remained behind here with a hundred men, and went no farther; while Karlsefni and Snorri went southward with forty men, stayed at Hóp barely two months, and returned the same summer.

Karlsefni then set out with one ship, in search of Thorhall Hunter, but the remainder of the company stayed behind; they sailed northward around Kjalarness, and then bore to the westward with the land on their port side; the country there was a wooded wilderness, as far as the eye could see, with scarcely any open spaces. When they had sailed for a long time, a river flowed down from the land from east to west; they sailed into the mouth of the river, and lay to by the southern bank.

It happened one morning that Karlsefni and his companions discovered, in a clearing in the woods above them, a speck which glittered towards them, and they shouted at it; it moved, and it was a uniped, who slid down to the bank of the river by which they were lying. Thorvald Erics-

son was sitting at the helm, and the uniped shot an arrow into his bowels. Thorvald pulled out the arrow and said: "There is fat about my entrails; we have come to a good land, but yet we shall scarcely enjoy it."

Thorvald died of this wound shortly after. Then the uniped ran away again towards the north. Karlsefni and his men pursued him and saw him at times; the last they saw of him was when he jumped into a creek. Then they returned, and a man made this verse:

"The men pursued,
Very true it was,
A uniped
Down to the strand;
But the strange man
Ran away swiftly
Plunged into the sea;
Hear thou, Karlsefni!"

They then sailed back towards the north, and thought they saw the land of the unipeds. Therefore they would not expose their men any longer. They concluded that the mountains of Hóp were the same as those which they now viewed, and there appeared to be very nearly the same distance from Straumfiord to both places.

The third winter they were in Straumfiord. Then the men split up into factions, the women being the cause; for the unmarried men tried to seize the married women, whence great trouble arose. There Snorri, Karlsefni's son, was born the first fall, and he was three winters old when they went away. When they sailed from Vinland, they got a southerly wind, and so came to Markland, where they found five Skrælings, of whom one was bearded, two were women, and two were children. The Norsemen caught the boys,

but the others escaped and sank into the ground. They took the two boys with them, taught them the language, and baptized them. They called their mother Vethilldi (*AM* 557: Vætilldi) and their father Uvæge. They said that the Skrælings were ruled by kings, of whom one was called Avalldanía (*AM* 557: Avaldamon) and the other Valldidida. They stated that they had no houses; the people lived in caves or holes. They said there was a land on the other side, opposite their land, which was inhabited by people who wore white garments, and who carried poles before them to which pieces of cloth were attached, and they shouted loudly; people think that this must have been Hvitramannaland (White-men's Land), or Great-Ireland. (*AM* 557: Now they arrived in Greenland, and remained with Eric the Red during the winter.)

Bjarni Grimolfsson was driven with his ship into the Irish Sea; they came into a "worm-sea" (*maðksjó*), and the ship began to sink fast. They had a boat which was painted with seal-tar, for that the sea-worm does not penetrate. They went into the boat, and they saw then that it could not hold them all. Then said Bjarni: "Since the boat will not hold more than half of our men, it is my advice that the men who are to go into the boat, be chosen by lot, for this selection must not be made according to rank." This seemed to them all such a generous offer that no one would say anything against it; they did so; the men cast lots, and it fell to Bjarni to go into the boat, and half of the men with him, for the boat did not hold any more. But when they had got into the boat, an Icelander who was on board the ship, and who had accompanied Bjarni from Iceland, said: "Do you intend, Bjarni, to leave me here?" "So it must now be,"

answered Bjarni. He said: "Not such was your promise to my father, when I left Iceland with you, that you would thus leave me when you said that we should both share the same fate." Bjarni answered: "Then it shall not be so; now you go down into the boat, and I will go on board the ship, since I see that you are so eager to live." Bjarni then went on board the ship, and this man went into the boat, and they proceeded upon their voyage until they came to Dublin in Ireland, and there they told this tale; but most people think that Bjarni and his companions perished in the "worm-sea," for they were never heard of afterwards.

The following summer Karlsefni went to Iceland, and Gudrid with him, and he went home to Reynisness.

Other Voyages to Vinland

Apart from the accounts in *GÞ* and *ER*, only brief and scattered references to Vinland are in existence.

In the *Icelandic Annals*,* it is stated that, in 1121, "Bishop Eric Gnupsson of Greenland went in search of Vinland." It is not told why this voyage was undertaken, nor are we informed whether the bishop succeeded in finding Vinland, or whether he returned. We know, however, that a new bishop was ordained for Greenland in 1124, which appears to show that Bishop Eric was considered as dead —if he ever really was Bishop of Greenland, about which there is some doubt, for no record of his ordination has been preserved.

In the *Annals of the Flatey Book*, we find the following record under the year 1347: "A ship came then from Green-

* *GHM*, III, 6.

land, which had sailed to Markland, and there were eighteen men on board."

In the *Elder Skálholt Annals*, the same event is recorded as follows: "There came also a ship from Greenland, smaller in size than small Icelandic trading-vessels. It came into the outer Straumfiord [in Iceland]. It was without an anchor. There were seventeen men on board, and they had sailed to Markland, but had afterwards been driven hither by storms at sea."

Various Doubtful or Erroneous Records

The Hönen Runic Stone

At Hönen in Ringerike, Norway, once existed a runic stone, the inscription on which was copied in 1823, but the stone has since disappeared. Professor Sophus Bugge conjectured that this inscription dated from 1010 to 1050, and read and translated it as follows:

"*Út ok vítt ok þurfa*
þerru ok áts
Vinlandi á ísa
í úbygd at komu;
auð má illt vega,
(at) dóyi ár.

"They came out [on the sea] far distant and were in need of dry clothing and food, away towards Vinland on the ice in the uninhabited regions. Hardships [evils] may destroy luck, so that one dies early." Professor Finnur Jónsson, however, considers both the inscription and its reading as too uncertain to be of any historic value.

An interesting discussion of the Hönen-stone was given by Professor Yngvar Nielsen, at the Americanist Congress

at Stuttgart in 1904.* Professor Nielsen is of opinion that the inscription refers to a young man of high birth who took part in an expedition to Vinland, and he suggests that this expedition may have been undertaken by the Norwegian King Harald Haardraade. He bases this opinion on the statements of Adam of Bremen about King Harald's voyage of exploration.

Ruins and Inscriptions found in America

A ruin at Newport, Rhode Island, was once thought to date from the time of the Norsemen. It has been proved, however, that it was used as a mill by Benedict Arnold, the governor of Rhode Island, who in his will, in 1677, refers to it as "my Stone built Wind Mill," and, from all that has come to light, it seems highly probable that it was built by him.†

Certain ruins of houses and graves found by the late Professor Horsford and by Miss Cornelia Horsford on the banks of the Charles River, at Cambridge, Massachusetts, were believed by them to be Norse. The researches which some years ago were undertaken on the spot did not bring to light any positive evidence to substantiate this theory, but, on the other hand, there appears to be nothing absolutely to disprove it.

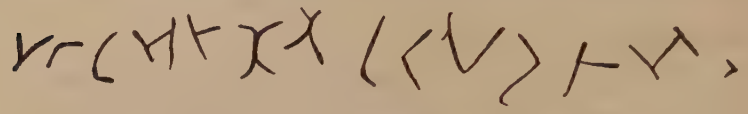
The marks on the so-called Dighton Writing-Rock, which were held by some to be runic, have been determined as petroglyphs of Indian origin.

Of the same order as the Dighton Rock is a stone with inscription, discovered at Yarmouth, Nova Scotia, a num-

* *Historisk Tidsskrift*, Series 4, III, 248-293, and *Nordmænd og Skrælinger i Vinland*, Kristiania, 1904.

† C. T. Brooks, *The Old Stone Mill in the Town of Newport*, Newport, 1851.

ber of years ago, and now preserved in the Yarmouth Public Library. It weighs about four hundred pounds. Whatever may be the origin of the inscription, which is here given in



Inscription on the "Yarmouth Stone," Nova Scotia

facsimile on a reduced scale, it seems certain, according to Sir Daniel Wilson, that it is not runic.

The so-called Kensington Stone, found in Minnesota, bears a runic inscription, but it has been conclusively shown by Professor G. T. Flom* to be a recent forgery.

In Chapter X mention is made of some ruins on the coasts of Labrador, which are referred to in the reports of the Moravian Brethren and by Dr. Grenfell. Their origin is still unknown, and it is desirable that they should be examined by archaeologists.

Cartographic Records

The late Dr. Axel Anthon Björnbo, in his admirable work, *Cartographia Groenlandica*,† constructed a diagram (facing page 118) to illustrate the Norse-Icelandic conception of "*kringla heimsins*," the orb of the world. This diagram shows how the Norsemen tried to reconcile the dogmatic geography, transmitted to them by the Church, with their own discoveries. Whether the outer ocean (*mare oceanum*, *úthaf*) extended between Vinland and Markland, between Markland and Helluland, or between Helluland and Greenland, Björnbo thought, was not quite clear to

* *The Kensington Runic Stone*, Illinois State Historical Society, 1910.
† *MG*, XLVIII, 1911.

the Norsemen. His conclusions on this subject were as follows:

"In Iceland and in Norway there developed in the twelfth and thirteenth centuries an independent geographical system, which corresponded theoretically and formally with Roman cosmography, as it had been developed by Macrobius and Isidore, but which in reality entailed a profound change in the conception of the world. The basis of this change was formed by the discovery of Greenland, parts of North America, and, possibly, Spitzbergen. On the whole, the location of these countries was correctly known to the Norsemen, but for several reasons, amongst others in order to maintain the theory that the continents formed a round disc surrounded by the ocean, it was supposed that Greenland stretched out from Russia, and the North American continent [Vinland] stretched out from Africa. The author of the *King's Mirror*, moreover, influenced by his knowledge of the polar climate of Greenland, took the first cautious step to break with the theory of the inhabitability of the cold zones by advancing the opinion that Greenland, although it was partly inhabited, was located in the extreme north and in the cold zone."

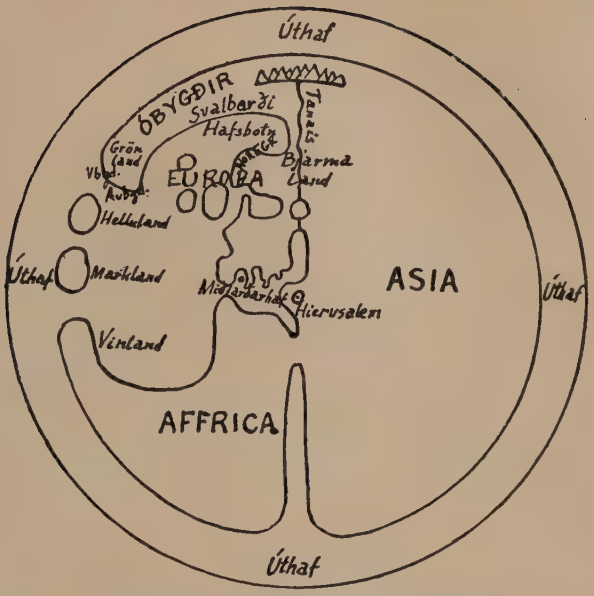
The direct influence of northern traditions on mediaeval cosmography is first traceable in the works of the Danish cartographer (*mathematicus*), Claudius Claussón Swart, known under the name of Claudius Clavus, who was born in 1388. Clavus possessed a relatively accurate knowledge of Greenland and of the old Norse traditions, which enabled him to break completely with the old conception of the Arctic Circle as the boundary of the continent washed by the outer ocean, or at least as the boundary of the habitable world.

Clavus's so-called "Nancy map" of 1427, the original of which dated from 1424, was the first graded map since the time of the ancients and the first to show Greenland. Clavus believed that it was possible to sail from Norway to China across or near the pole, and he was the first to suggest the idea of a northwest passage. His work, in fact, inaugurated a complete revolution in the cosmographic conceptions of his time.

The only map on which the discoveries of the Norsemen are indicated in a clear, indisputable manner is that of Sigurdr Stefánsson, which, according to Storm, dates from about 1590. This map is here reproduced photographically, as given by Bishop Thordr Thorlaksson about 1670.* It seems certain that Stefánsson was acquainted with the *Saga of Eric the Red*, but there is no positive evidence that he was in possession of other independent information.

It is believed by some that certain other maps from the fourteenth to the seventeenth centuries show traces of the traditions of the Norsemen's discoveries, which may have reached early cartographers, but the indications are so vague and doubtful that they appear to have little scientific value.

*Royal Library, Copenhagen, Old Collection, No. 2881, 4to.



Kringla Heimsins. MG, XLVIII

Orb of the World as conceived in Iceland and Norway from xii to xiv century

Constructed by Dr. A. A. Björnbo

Map of Sigurdr Stefánsson

CHAPTER VI

HISTORIC VALUE OF THE ACCOUNTS CONSIDERED IN THEIR ENTIRETY

IN general, the simple and straightforward narrative in the sagas of the discovery of America by the Norsemen will by itself be sufficient to convince people of its essential truthfulness. Many people, however, who have had no opportunity to study the sagas, but who have heard of the somewhat fantastic conclusions that certain individuals have drawn from them, regard the entire story as due to the fancy of the old Norse writers and of modern amateur historians. Recently, moreover, Dr. Fridtjof Nansen, in his book *In Northern Mists*,* has thrown doubt upon the saga accounts, declaring that both the version in the *Flatey Book* and in the *Saga of Eric the Red*, as well as most other records of the Vinland voyages, must be considered unhistoric. It is, therefore, necessary, before we go further, to meet this criticism and to consider the reliability and genuineness of the accounts in their entirety.

Nansen bases his skeptical view of the sagas on their analogy to certain legends. As early as among the ancient Greeks, and continued to the Middle Ages, occur myths of certain *Insulæ Fortunatæ*, Isles of the Blest, situated in the ocean far to the west, on which were found wild grapes and self-sown wheat. According to Pliny and Isidore, these Isles were west of Morocco, and the conception of them was probably derived from the Canaries, which were known even to the Phœnicians and the Carthaginians. The account of the Isles of the Blest was carried to Ireland, and from there to

*New York, 1911; *Nord i Taakeheimen*, Kristiania, 1911.

Norway and Iceland. In the Old Norse language the name *Insulæ Fortunatæ*, according to Nansen, became *Vinland hit Góða*.

Now Nansen admits as probable, or even certain, that the Norsemen discovered and visited America. When rumors of the new land found to the southwest of Greenland reached Iceland (Europe), they were associated with the mythical ideas of the Isles of the Blest, and the name "Vinland," together with the notion of grapes and self-sown wheat-fields, was transferred to it. Gradually fragments from ancient legends, Greek, Roman, Irish, and others, crystallized round this kernel, until finally the detailed account of the Vinland voyages as given in the sagas was developed. The notion that Vinland was connected with, or was in close proximity to, Africa arose as a natural consequence of its confusion with the *Insulæ Fortunatæ*, of which confusion it bears witness.

Nansen argues at considerable length for his proposition on the analogy between ancient or mediaeval myths and the sagas, and concludes by saying: "But even if we are obliged to abandon the Saga of Eric the Red and the other descriptions of these voyages as historical documents, this is compensated for by the increase in our admiration for the extraordinary powers of realistic description in Icelandic literature. In reading Eric's Saga one cannot help being struck by the way in which many of the events are so described, often in a few words, that the whole thing is before one's eyes, and it is difficult to believe that it has not actually occurred. The Icelanders created the realistic novel."

No one can deny the possibility that certain legendary

traits may have found their way into the sagas. Thus, for instance, the name Vinland, and perhaps also the notion of grapes and self-sown wheat, may have had the origin which Nansen supposes, although this is by no means probable. When Nansen asserts that the conceptions of wine and wheat were foreign to the Norsemen, he is, according to Professor Finnur Jónsson,* mistaken. Both wine and wheat were from olden time staple articles of import into the north. Thus it is stated in *Egil's Saga* that a Norseman in the ninth century in England bought a cargo of "wheat, honey, wine, and clothing."

While we must admit as a possibility a direct connection between the mythical legends and the name of Vinland and its attributes, it is far more difficult to follow Nansen in his assertion that the saga accounts in their entirety were built up of mythical material round such a nucleus, in itself largely mythical and vague.

The analogy between the sagas and the old Irish and other legends is very incomplete, and where it exists, it may be largely explained by the simple fact that the fine climate and natural wealth of the coasts of America, as compared with the severe climate and the poverty of Greenland and Iceland, made the new land appear to the Norsemen in the same light as did the African islands (*Insulæ Fortunatæ*), with their equable climate and rich soil, to people about the Mediterranean.

It is not possible, without taking up too much space, to go through all the analogies pointed out by Nansen. We shall only give here as a sample one that he considers as very remarkable, the likeness between the voyage of the Norse-

* *Erik den Rödes Saga og Vinland, Historisk Tidsskrift*, 1911.

men and that of the Irish Saint Brandan to the Grape Isle (*Insula Uvarum*), one of the Isles of the Blest. The Brandan legend was written not later than the eleventh century, and was well known in Iceland.*

Nansen writes: "In the Latin '*Navigatio Sancti Brandani*,' a description of Brandan's seven years' sea-voyage in search of the Promised Land, it is related that one day a mighty bird came flying to Brandan and the brethren who were with him in the coracle; it had a branch in its beak with a bunch of grapes of unexampled size and redness, and it dropped the branch into the lap of the man of God. The grapes were as large as apples, and they lived on them for twelve days.

"Three days afterwards they reached the island; it was covered with the thickest forests of vines, which bore grapes with such incredible fertility that all the trees were bent to the earth; all with the same fruit and the same colour; not a tree was unfruitful; and there were none found there of any other sort.

"Then this man of God goes ashore and explores the island, while the brethren wait in the boat [like Karlsefni and his men waiting for the runners], until he comes back to them bringing samples of the fruits of the island [as the runners brought with them samples of the products of Wineland]. He says: 'Come ashore and set up the tent, and regale yourself with the excellent fruits of this land, which the Lord has shown us.' For forty days they lived well on the grapes, and when they left they loaded the boat with as many of them as it would hold, exactly like Leif in the '*Grænlendinga þáttr*,' who loaded his ship's boat with

* *In Northern Mists*, vol. i, p. 358.

grapes when they left Wineland; and like Thorvald at the same place, who collected grapes and vines for a cargo.

"The fortunate island on which the monk Mernoc lived [at the beginning of the '*Navigatio*'] was called the '*Insula Deliciosa.*' The great river that Brandan found in the Terra Repromissionis, and that ran through the middle of the island, may be compared with the stream that Karlsefni found at Hóp, in Wineland, which fell into a lake and thence into the sea, and where they entered the mouth of the river. But the river which divided the Terra Repromissionis, and which Brandan could not cross, was evidently originally the river of death, Styx, or Acheron in Greek mythology [*Gjoll* in Norse mythology]. One might be tempted to suppose that, in the same way as the whole description of Wineland has been dechristianized from the Terra Repromissionis, the realistic, and therefore often rationalizing Icelanders have transformed the river in the Promised Land, the ancient river of death, into the stream at Hóp."

A comparison between the flowery legend and the terse realistic narrative of the saga does not seem to reveal any organic relation between the two, but it is of course possible that certain details in the saga may have been borrowed from the legend. Other analogies do not appear to be more complete. There seems, indeed, no reason to go back to mythical tales in order to find the origin of the sagas. Let us consider first, in a general way, the probability of the Norsemen discovering and settling on the coasts of America. We have already mentioned the fact that the Norsemen had no means of determining the longitude astronomically. They often drifted about on the ocean for a long time, and the persistent northerly and easterly winds, which often

prevail in the North Atlantic during the early summer months, might very easily have driven their light vessels hundreds of miles to the southwest. We cannot wonder, therefore, that such vessels, sailing from Iceland, Norway, or the Scotch islands, and bound for Greenland, should at times be driven so much out of their course that they would come in sight of or strand on the shores of Labrador, Newfoundland, or even parts of America farther south. It was in this way that both Iceland and Greenland were discovered. Considering that the Norse colonies in Greenland existed for more than four hundred years, a period at least as long as that which has now elapsed since the discovery of America by Columbus, and that during this long period trade was kept up, at least intermittently, between these colonies and Iceland and Norway, it must be admitted that the chances of such accidental discovery of America were very great.

Moreover, the Norse Greenlanders, who habitually sailed far to the north along the west coast of Greenland, may at times have been driven across the Davis Strait, which at Holstensborg is only one hundred and sixty-five miles wide, and must thus have come in sight of Baffin Land or Labrador. Once this region was discovered, the intrepid and enterprising explorers would hardly hesitate to push southward along the coast to milder climates, where navigation was far simpler and less dangerous than about Greenland, and where it was easier to obtain means of sustaining life. The coasts of America, even of Labrador and Newfoundland, with their wealth of timber, berries, fish, birds, and mammals, must have appeared an Eldorado to the Greenlanders, who there found in abundance most of the natural products in which Greenland was lacking.

We may, therefore, assert that, even had the sagas not contained one word of reference to such discovery, we should still be justified in concluding that, under the given circumstances, and having regard, in particular, to the means of navigation of the Norsemen, they could hardly help discovering America, most probably Newfoundland and Labrador, but perhaps also coasts to the south of Newfoundland. On this point, indeed, all authorities, including Dr. Nansen, agree, that the Norsemen did land on some part of the American continent.

We might conjecture, without knowing anything of the reports of the sagas, that the Norsemen would make attempts at settlement in these new countries, but that, considering their small number compared to the numerous native population, such attempts were doomed to failure. Even the colonists, who several centuries later landed on these coasts in much greater numbers, provided with firearms and all the advantages of a more advanced civilization, found it difficult at times to hold their own against the natives. Such intercourse as the Greenlanders could keep up with America in those times would naturally be confined to occasional expeditions for obtaining timber and for trading with the natives.

These logical conclusions, based on conditions which are known to have existed, are fully corroborated by the saga accounts, which do not, therefore, in their main features contain anything improbable. The sagas relate in sum, so far as the scope, the object, and the result of the voyages are concerned, exactly what we should expect to have taken place, even had the tales of the sagas never reached us.

Evidence of the truthfulness of the sagas is found, more-

over, not only in their main features, but also in their details. Their descriptions of the new land, written several centuries before the voyage of Columbus, are specific and characteristic, and correspond remarkably well with certain parts of the American coasts, as will be shown in later chapters. Furthermore, the mode of navigation that they report accords with what we know from other sources of the nautical means and methods of the Norsemen.

According to the sagas, the most important product which the Norsemen brought home from Vinland and Markland was timber. This would naturally be the case, for while timber was very scarce and valuable in Greenland, it was abundant on the coasts of America, and the voyagers merely responded to their economic conditions and necessities. This point alone should be sufficient to remove from the sagas the suspicion of being a mere combination of legends and myths.

The intercourse of the Norsemen with the natives, the tales of bartering and fighting, the general high-handed attitude of the visitors, and their final virtual defeat, all bear the stamp of genuineness, and have no parallel in happenings on the *Insulæ Fortunatæ*.

A still stronger proof of the historic reliability of the sagas is found in internal evidence of their truth. Their style is realistic, and the information they give is detailed and definite. As Dr. Nansen himself says, it is difficult to believe that the incidents did not actually happen. According to the highest authorities on Icelandic literature, the archaic verses by Thorhall Hunter and about the uniped are undoubtedly genuine. Further internal evidence of veracity will be pointed out in the next chapter.

The inconsistencies and contradictions in the sagas can be satisfactorily explained by the overlapping and intermingling of different narratives resulting from their mode of transmission. The fabulous statements that appear occasionally do not, as already explained, discredit the reliability of the sagas as a whole. The Norsemen were very superstitious, and it was to be expected that their accounts of voyages to unknown lands, where they met natives of a different race, should show traces of their credulity. In truth, the fabulous parts are really evidence of their subjective truthfulness; they represent the facts as they were viewed by the participants.

Finally, attention may be drawn to the corroborative evidence that exists in the form of independent and scattered statements in a variety of sources lending support to the two principal and detailed saga accounts. We shall here merely refer to the independent remarks about Vinland found in Adam of Bremen's work, the brief statements of Ari Frode in the *Islendinga Book*, the references in *Landnáma Book*, the *Eyrbyggja Saga*, and the *Grettir's Saga*, the geographical description due to Abbot Nicolas of Thingeyri, the reports in the *Icelandic Annals* about the voyage of Bishop Eric in 1121, and the storm-driven ship that came from Markland in 1347. These references show how widespread was the knowledge of these voyages in Scandinavia, and they testify to a firmly established and generally known tradition, which reaches back to the time of Ari Frode and the first settlement of Greenland.

The brevity of the reference to Vinland by early writers like Ari Frode and Snorri does not necessarily show, as argued by Nansen, that there was nothing more to be said

about the discovery, and that the more complete accounts that afterwards appeared were, therefore, the invention of later saga-writers. Historians like Ari and Snorri had set themselves the task of writing about topics of more general interest, such as the history of Iceland and Norway, which to them were much nearer and much more important.

In conclusion, then, we may assert that the two main accounts of the voyages of the Norsemen to America, those namely in the *Flatey Book* and in the *Saga of Eric the Red*, may be considered as essentially historic, and cannot be explained satisfactorily as pure fiction derived from ancient legends or myths.

CHAPTER VII

THE FLATEY BOOK VERSUS THE SAGA OF ERIC THE RED

THE opinion now generally held that the account of the Vinland voyages in the *Flatey Book* is untrustworthy, while that in the *Saga of Eric the Red* is essentially historic, results mainly from an essay by Dr. Gustav Storm, entitled *Studies on the Vinland Voyages.*

In order to obtain a basis for the following discussion, we shall commence by stating briefly Storm's views. Then we shall examine the various grounds on which these views rely, and discuss other points which may serve to throw light on the subject.

According to Storm, the main Icelandic accounts of the discovery of Vinland and its attempted colonization are found in two diverging narratives, which have been mixed together in a rather absurd manner, and which must, therefore, be kept distinct from each other. The first of these is the *Saga of Eric the Red* (*ER*), which dates from the second half of the thirteenth century, when saga literature was in its prime. The second, which is post-classic in form and conception, is found in the *Flatey Book* (*FB*), which dates from the last half of the fourteenth century. In order that the reader may understand Storm's criticism, especially as regards chronology, it is necessary that he should be acquainted with the general arrangement of the material in *FB.*

This material occurs in three different sections, each of which is inserted in different places of the *Saga of Olaf Tryggvason.** The first section contains the separate *Story*

* *Flateyarbók*, Kildeskriftfondets Udgave, Kristiania, 1860–68. The three sections here referred to occur on pages 429-432, 448, and 538-549, respectively.

of Eric the Red, with his settling in Greenland, a brief mention of Leif's voyage to Norway, and the voyage of Bjarni. The second section merely forms part of the saga of Olaf Tryggvason, and is entirely independent of the first and third sections. It contains the paragraph on Leif's voyage from Norway to Greenland, where it is stated that he saved a shipwrecked crew and that he obtained the surname "the Lucky." This paragraph is practically identical with the corresponding paragraph in the long *Saga of Olaf Tryggvason* (see page 77), except that the remark "and on the same voyage he found Vinland the Good" is omitted in *FB*. Storm holds that this omission is a wilful corruption of the text, undertaken by the compiler of *FB* in order to avoid a conflict with the tale of Bjarni, whose voyage and discovery is substituted for Leif's discovery. The third section of the *FB* version is separated from the second by much other matter, and bears the title *Grænlendinga þáttr* (*Gþ*), which comprises the whole subsequent series of Vinland voyages. We find here that Leif, on his voyage of exploration, again saves a shipwrecked crew, and that he is once more given the surname "the Lucky," which fact seems to have been overlooked by the author of *FB*. This section, which is really a continuation of the first, is inserted in *FB* at the place which was considered chronologically proper by the compiler, namely after the death of Olaf Tryggvason, when Earl Eric was reigning in Norway, after the year 1000. It opens with the words, "It is now next to this that Bjarni Herjulfsson went from Greenland to Norway and visited Earl Eric," from which Storm concludes that this visit cannot have taken place earlier than 1001–1002. Hence he arrives at the following chronology for *FB:*

Bjarni's voyage from Iceland to Greenland, on which he discovered the coasts of America	985
Bjarni's voyage to Norway (not earlier than)	1001
Bjarni's return from Norway to Greenland	1002
Leif's exploring expedition to Vinland	1003–1004
Thorvald's voyage to Vinland	1005–1006
Thorstein's voyage	1007
Karlsefni's arrival in Greenland	1008
Karlsefni's voyage to Vinland	1009–1011
Freydis's voyage to Vinland	1012–1013
Karlsefni's voyage to Norway	1013–1014

On the other hand, following *ER*, Storm arrives at the following chronology:

Leif's discovery of Vinland	1000
Thorstein's voyage	1001
Karlsefni's arrival in Greenland	1002
Karlsefni's voyage to Vinland	1003–1006

Storm bases one of his strongest arguments against *Gþ* on the discrepancy between these chronologies.

The latter chronology he considers the more probable because Leif's return voyage from Norway, according to the old fixed tradition, took place in the year 1000, and because, in the case of Karlsefni's expedition, only the time 1003–1006 can in his opinion be reconciled with the *Eyrbyggja Saga*, a point which will be discussed below. *Gþ*, on the other hand, being inconsistent with these data, he considers as unhistoric.

Storm further asserts that *Gþ* appears to stand quite independent of other Icelandic literature, and its genealogical information differs considerably from *Landnáma Book*. Bjarni is otherwise quite an unknown person, and the account of his discoveries conflicts entirely with the reliable

reports of Leif's discovery in the year 1000. Essentially the same events form the subject of both sagas, but the account of *ER* is far more homogeneous, consistent, and probable. After having criticised several minor points in the *FB* version, Storm sums up his conclusions as follows:

"Weighing all that has been said, it will, I certainly think, be safest henceforth to treat the account in *Gþ* with great circumspection. Whatever has its only basis in *Gþ* must be rejected as doubtful, and whatever is there found at variance with early tradition, as wanting historical foundation. Accordingly, Bjarni Herjulfsson's voyage should no doubt be omitted, to make room for Leif Ericsson's voyage, and the voyages of Thorvald Ericsson and of Freydis should be comprised in the great exploratory expedition under Thorfinn Karlsefni. Geographical data and descriptions relying for support solely on *Gþ* must be sifted with great care, and never admitted save when borne out by the *Saga of Eric the Red*. Not till this has been done, can we venture on a critical investigation of the geography of Wineland."

We shall now examine separately each of the points on which Storm has based his criticism of the *FB* version.

Genealogy

According to Storm, two discrepancies are found between the genealogical statements of *Gþ* and the older sources. One is that, according to *Gþ*, Gudrid had formerly been married to a certain Thorir, a fact not mentioned elsewhere; the other is that Gudrid's son's daughter was the grandmother of a certain bishop, while according to all other sources she was his mother. It is evident that neither of these

errors, if errors they be, have anything to do with the Vinland voyages; their only significance lies in the fact that they point to a certain ignorance of historical details or a lack of accuracy on the part of the compiler of *FB*.

Bjarni versus Leif

While the compiler of *FB* omits the discovery of Vinland by Leif on his return voyage from Norway, and gives to Bjarni the credit of having first discovered the new land, Storm eliminates from history the entire voyage of Bjarni in order to make room for Leif's discovery. But may not both events have occurred, in which case one omission would be as unjustifiable as the other?

Let us first assume that Bjarni's discovery actually took place in 985 or 986. If we also assume, in accordance with the old tradition, that Leif, on his return voyage from Norway in the year 1000, likewise discovered the coasts of America, and, further, that his exploring expedition took place in 1003–1004, after Bjarni had returned from his voyage to Norway, there would so far be no conflict. Storm finds it unreasonable that such a long time should have passed between Bjarni's discovery and Leif's voyage of exploration, but it must be borne in mind that during these years the young colony in Greenland must have been fully occupied in establishing itself. Houses had to be built; fishing-grounds had to be found far away in Nordrseta; and the colony had to be organized. On the whole, the colony was poor, and little energy and small means could be spared for undertaking costly expeditions to new lands. The few available ships were probably fully engaged in trading and in fishing expeditions to the north. It is worth noting that,

in the case of nearly every voyage of exploration, the saga states how the ship for the voyage was procured, showing the scarcity of large vessels. These circumstances may explain why the lands which Bjarni had found were not explored for a number of years. Leif then returned from Norway; he was young and ambitious; his voyage across the Atlantic to Norway and back shows that he was a bold and skilful mariner; and he was the son of the most prominent man in Greenland. His voyage to Norway had been a success, and probably he acquired wealth by the salvage of timber from the wrecked ship. If, moreover, Leif himself had seen the new land on his return, we find no difficulty in understanding why he should then, and not at an earlier time, venture on such an expensive and dangerous expedition, and how he would thus become the first actual explorer of the new land. In other words, the supposed conflict between Leif's and Bjarni's voyages disappears.

Schöning* has suggested that Bjarni's voyage to Norway may have taken place as early as in 988 or 989, when Earl Eric was reigning over a certain part of Norway under the sovereignty of the King of Denmark. This would imply that the opening statement of *Gþ* had been inserted in a chronologically wrong place by the author of *FB*. The supposition contains nothing unreasonable, and, if it is correct, Leif's exploring expedition may well have taken place as early as 1001, the year after his return from Norway.

P. A. Munch supposed that Bjarni's father, Herjulf, did not go to Greenland till the year 999, and hence Bjarni did not discover America till the year 1000. No claim to correctness for any particular chronology is here advanced.

**GHM*, I, 267.

It is merely intended to show that Storm's condemnation of the account of Bjarni's voyage, so far as this condemnation is based on chronology, is by no means founded on certain evidence.

In the story of Leif's voyage to Norway (*ER*) is found a detailed account of a love affair which he had on the Hebrides, before his arrival in Norway, with a woman named Thorgunna. This event, if we follow *ER*, should have taken place in 999, but, as shown by P. A. Munch,* the account conflicts with certain trustworthy statements in the *Eyrbyggja Saga*, which fix it about 987. Munch concludes that the account was wrongly interpolated in this place, and, although the chronology of Leif's voyage can hardly be considered as shaken by the error, it shows at least that *ER* also has its inconsistencies and mistakes.

Leif's discovery of Vinland on his return voyage from Norway is described in *ER* in a remarkably laconic manner. The statements concerning vines (*vínviðr*) and self-sown wheat-fields stand entirely isolated, unsupported by corroborative details, such as are usually found elsewhere in the sagas. It looks as if part of the tale was omitted, and it seems likely that the story of the Scotch runners in *ER* belongs here. The omission in *FB* of Leif's discovery of Vinland on his return from Norway is undoubtedly a wilful corruption of the text, as asserted by Storm, but it does not follow that Bjarni's discovery is pure invention. Bjarni's tale does not, in itself, contain anything improbable. His diffidence on starting from Iceland on the unknown voyage to Greenland bears the stamp of truth. The *Hafgerðinga Drápa*, which occurs in this section of *FB*, seems genuine. As will be

* *Det Norske Folks Historie*, 1853, II, 563.

explained in Chapter XI, the account of his navigation is logical and fairly consistent with actual geographical conditions. A reasonable explanation may be given of the mention of glaciers on this voyage, as well as on Leif's voyage (*Gþ*), when glaciers were seen in Helluland — one of the points in *FB* which is criticised by Storm as inexplicable. On the whole, Bjarni's narrative may well bear comparison with Leif's in *ER*, and we have, therefore, no more right to reject Bjarni's discovery, as proposed by Storm, than to reject Leif's discovery, with the author of *FB*.

Leif's Exploring Expedition (*Gþ*)

This account is very detailed and definite, and the expedition forms a logical sequel to Bjarni's voyage, seen from a navigator's point of view. Leif would naturally, as the safest method of navigation, follow the reverse course of Bjarni. By sailing across Davis Strait to the land which Bjarni had seen last, whether Baffin Land or Labrador, he would have the shortest voyage across the sea; and having once made land, he would simply follow the coast southward. The topographical description of Markland is perhaps the most weighty evidence in favor of this saga. The woods and the extensive, flat, white sand beaches are features which actually exist on the coasts of America, and which could not, at the time this saga was written, one hundred years before the discovery of Columbus, have been known in Iceland except from the traditions of the Vinland voyages. The Norsemen would naturally mention these features as something remarkable, since they were not found in Iceland or Greenland.

Likewise, the astronomical remark on the sun's azimuth

at sunrise and sunset appears genuine. Even Storm regards it as "certain evidence" that the Norsemen reached as far south as the parallel of 50°, and opens his essay with a long and minute investigation of this observation, notwithstanding the fact that it occurs nowhere except in *GÞ*, which is declared by Storm to be unreliable. Storm, in fact, uses this astronomical remark virtually as the cornerstone of his theory that Vinland was in Nova Scotia.

Another bit of evidence showing that we have here to do with an independent expedition by Leif is found in the statement that he built houses, Leifsbooths, in Vinland, which are referred to repeatedly later. This statement cannot belong to Leif's return voyage from Norway, since we find no mention that he spent a winter in Vinland on that voyage.

Storm's criticism of the statements concerning *vínvið* and *vínber* does not seem quite justified by the text. "The grapes," he says, "are discovered in winter, nay even in spring (!), the man who found them gets drunk from eating the fruit (!), the grapes are gathered too in the spring (!), and the ship's boat is filled with them (!). And again, the vines (*vínvið*) are spoken of as big trees, which are felled in order to be used as timber (!)." But, as seen on page 87, the text of the saga reads as follows: "and each day we will either gather *vínber* or cut *vínvið* and fell trees, so as to obtain a cargo of these for my ship. . . . It is said that their after-boat was filled with *vínber*. A cargo was now cut for the ship, and when the spring came, they made ready and sailed away." It does not, therefore, appear from the text, as Storm asserts, that *vínber* were discovered or gathered in the spring, or that the vines were to be used as timber,

but it is clearly stated that trees were felled. As regards the boat full of *vínber*, it is probably a simple exaggeration, but it seems at least possible that the *vínber*, whether they were grapes or other berries, may have been first dried in the sun, and that they were finally brought to the ship in the after-boat. That dried *vínber* were known to the Norsemen, and probably considered by them as a great delicacy, we learn from a letter written in 1308 by Bishop Arne in Bergen to Bishop Thord in Greenland. This letter mentions several accompanying gifts, among them a cask with *vínber* (*eit fat med vínberium*).* Why the vines should be gathered is not clear, but a possible explanation will be discussed in a later chapter.

Storm uses the mention of *vínber* in the sagas as another of his chief arguments in favor of his theory that Karlsefni's Vinland was in Nova Scotia. Now the term *vínber*, which occurs so frequently in *Gþ*, occurs only once in *ER*, and that is a passage about the Scotch runners, which is almost certainly interpolated. Storm, therefore, again bases his theory essentially on *Gþ*, in spite of his rejection of that saga.

Gþ repeats the story of the shipwrecked crew and of Leif's obtaining the surname "the Lucky," which events are stated earlier in *FB* to have taken place on his return voyage from Norway. These repetitions may be due to the carelessness of the author of *FB*, or they may be due to a desire on his part to report the tales as they reached him, even if they involved a conflict. Again, these errors cannot invalidate in their entirety accounts which are quite independent of them.

* *GHM*, III, 98.

Thorvald's Voyage (*Gþ*)

This expedition went first to Leifsbooths, and it is considered improbable by Storm that Thorvald, as well as Karlsefni and Freydis later on, should succeed in finding the same spot in the new land. We must, however, bear in mind here the great skill of the Norsemen in coastwise navigation, and that in all probability they had with them men who, having taken part in previous expeditions, could act as pilots. It could be no more difficult, and must have been connected with far less danger, for the Norsemen to find Leifsbooths on the coast of America than it was for them to find, for instance, the ice-bound Ericsfiord in Greenland. For the Norse sailors such achievements in navigation were, in fact, an ordinary occurrence, although, of course, in many cases they failed to reach their destination. In this case the sagas do not state that Leifsbooths were found without difficulty; it is merely stated that the Norsemen arrived there.

Concerning the deserted wooden shed or screen (*kornhjálm af trè*) found by Thorvald, Storm infers that "this presupposes cultivated grain, contrary to the unanimous tradition." Again, this inference does not seem justified by the text, for what the saga really says is that the Norsemen found a screen, which (in their opinion, or in the opinion of later saga-writers) was for the storage of grain. The Norsemen may, of course, have been mistaken as to the purpose for which this screen was built, and, in any case, it is not stated that the grain was cultivated.

The story of Thorvald's death, and the events that led up to it, as told in *Gþ*, agree well with the character of the Norsemen and the natives. The logical relation between

cause and effect is clearly exhibited. Thorvald and his men found on the beach some natives lying under their boats. The Norsemen, in their usual high-handed way, killed these men, except one, who escaped, and, as might have been expected, they were soon after attacked by the natives in great force. In the ensuing battle Thorvald was mortally wounded. According to *ER*, a fabulous creature, a so-called uniped, came out of the woods, and, without any apparent cause, fired an arrow, which hit Thorvald and caused his death. The tale in *Gþ* is at least as probable.

It may be added, finally, that the topographical description of Vinland given by Thorvald corresponds in a most remarkable manner with the coast of America round Cape Cod.

Karlsefni's Voyage

As told in *ER*, Karlsefni's voyage comprises in one expedition all the voyages of Thorvald, Karlsefni, and Freydis, as told in *Gþ*. At first sight the account appears to be fairly consistent; it contains many interesting details and many apparently genuine traits. A critical analysis reveals, however, questionable features, which we shall now discuss. We shall, moreover, attempt to show that the account of Karlsefni's voyage in *Gþ*, although less complete than that of *ER*, is superior to it in several points, and hence that it can in no case be discarded altogether, as proposed by Storm.

In the first place, the tale of the two Scotch runners in *ER* is inconsistent with the following part of the account. Although these people found *vínber* and self-sown or new-sown wheat, presumably indicating that Vinland had been reached, it appears from the first verse of Thorhall Hunter that Straumfiord, where the expedition arrived shortly after,

was not in Vinland. As pointed out by Finnur Jónsson,* the whole passage about these runners may be removed without disturbing the narrative. He suggests that this tale, which in itself is probably historic, was interpolated, having belonged originally to Leif's expedition. It will be remembered that Leif had obtained these two persons from Olaf Tryggvason. The story of Thorhall Hunter, moreover, is inconsistent. When he is preparing to leave Straumfiord, it is first stated that he intends to go in search of Vinland, but in the last of the verses which he composed on that occasion he says that he wants to go home to Greenland. Nevertheless, Karlsefni, as soon as he returns from Hóp, goes round Kjalarness in order to find Thorhall.

The version of *ER* is further weakened by the statement that, according to some people, Karlsefni spent only two months in Hóp and returned to Straumfiord the same summer. In that case Karlsefni would hardly have built houses there, as is stated, and the remarks about the mild winter climate must belong somewhere else.

The fight with the natives is told in *ER* as follows: The Skrælings, at first peacefully trading with the Norsemen, were frightened away by the bellowing of a bull, and this, apparently, caused them to return as enemies three weeks later. In the fight that ensued, the Skrælings threw a great ball-shaped body amongst the Norsemen; this ball made such a terrific noise that Karlsefni and his men were frightened and fled. Soon after, Freydis, who was pregnant, came out of the house, and, not being able to follow the men, she was left behind. She took up a sword, which she found

* *Erik den Rödes Saga og Vinland, Historisk Tidsskrift*, Kristiania, 1911, series v, vol. i.

by the dead body of Thorbrand Snorrason, laid bare her breast, and struck it with the sword. This so terrified the Skrælings that they fled to their boats and rowed away. It is difficult on the whole to reconcile causes and effects in the description of the battle, and the tale is evidently much distorted. The chapter about Thorvald's death, the uniped, and the capture of the two Skræling boys is believed by Finnur Jónsson to be a modification of an older chapter. It seems, indeed, likely that the tale about Thorvald's death belongs to another, independent expedition, as represented in *Gþ*.

Turning now to *Gþ*, we find that the Norsemen, after their arrival in Vinland and after having secured food, felled trees and hewed timber, apparently during the winter. The timber was laid on the rocks to dry. All this seems very natural and probable, but is not mentioned in *ER*, an omission which is the more strange as the acquisition of timber must have been of the greatest value and importance to the Norse Greenlanders. We find also in *Gþ* that the Skrælings were frightened by the bull, but this did not, according to *Gþ*, lead to any fight; the Skrælings simply fled, and tried to escape into Karlsefni's houses.

Karlsefni's cautious attitude towards the Skrælings, as described in *Gþ*, is characteristic of an experienced chieftain. He promptly prohibits the Skrælings to enter the houses, and forbids the sale of weapons. After the first, though peaceful, meeting with the Skrælings, Karlsefni has his men construct a fence of palisades around his houses, and everything is put in readiness for defence. At the next visit of the Skrælings, one of them tries to steal weapons, and is killed by Karlsefni's men. This agrees well with the

character of the natives on the American coasts, as related by later explorers and settlers, nearly all of whom mention their thieving propensities. It also agrees with the general attitude of the Norsemen toward native populations. These important and interesting details are not found in *ER.*

The battle with the natives is described in *GÞ* as follows: After the above mentioned incident, when the Skræling was killed, the natives fled. Karlsefni, who now anticipated an attack, stationed ten of his men in a certain position where they had the woods on one side and the lake on the other. They were there well prepared to resist a frontal attack, having both flanks protected. Karlsefni, moreover, prepared a surprise attack on the flank or rear of the enemy, by letting the main body of his men cut a path through the woods, from which they were ordered to debouch when the enemy advanced. The effect of the flank movement was to be increased by driving the bull, of which the Skrælings seemed to be very much afraid, ahead of the men through the woods. These tactics were successfully carried out. It will be admitted that throughout this narrative the causes are clearly stated and are in themselves natural and probable. The battle as planned by Karlsefni is in accordance with sound military principles.

As to the chronology of Karlsefni's expedition, Storm says that "only the time 1003–1006 can be reconciled with the *Eyrbyggja Saga*, according to which the sons of Thorbrand leave Iceland either in the year 1000 or one of the next following summers in order to join Karlsefni's expedition." The statement in the *Eyrbyggja Saga*, to which Storm refers, has already been quoted in full, and we shall here merely repeat certain sentences: "After peace had been

concluded between the Eyrbyggja and the Alptafiord men, Thorbrand's sons, Snorri and Thorleif Kimbe, went to Greenland. . . . Snorri went with Karlsefni to Vinland the Good." The peace referred to was concluded in the spring of 998, in which year or soon after, therefore, Snorri and Thorleif may be expected to have gone to Greenland. According to *ER*, Snorri went to Greenland together with Karlsefni, but as Storm puts this event at 1002, that is, four years after the peace had been concluded, his chronology does not correspond with the *Eyrbyggja Saga*. In fact, if Storm's chronology is right, there is on this point a conflict between *ER* and the *Eyrbyggja Saga*. If we follow the latter, we may assume that Snorri went to Greenland in 998 or 999, that is, some years earlier than Karlsefni; that on his arrival in Greenland he settled; and that he later joined Karlsefni on his expedition to Vinland. In such a case, there is no necessity for supposing that this expedition left Greenland in 1003; it may have sailed somewhat later, even several years, without conflict with the *Eyrbyggja Saga*.

Freydis's Voyage (*Gþ*)

This narrative is very realistic and free from all fabulous features, but on the other hand it is remarkably silent on all points concerning the voyage or the new country. It is the account of a treacherous, ill-tempered woman of strong character and a weak man who is led by his wife to commit a hideous crime, but nothing is told that is inconsistent with human nature, and has not its parallel elsewhere in the history of the Norsemen. (Compare the story of Hallgerda in the *Saga of Burnt Njal*.) That this narrative should be pure fiction, given as it is with many details and in the most

realistic manner, seems improbable; but it may well be that it is exaggerated.

It is said that Freydis made great efforts to conceal her evil deed, but the truth leaked out at last, and reached her brother Leif. He disapproved strongly of what his sister had done, but it seems not unlikely that he kept the story to himself, and that it was not generally known till many years later, so that in the meantime a false version of the voyage was given out and gained credence. Such wilful misrepresentation of the facts may perhaps account to some extent for the discrepancies between the main saga accounts. It is worth noting that the same woman who in one saga is represented as having saved the whole party by her valor, is in the other saga represented as treacherous and cruel, and as the instigator of crime. This points to strong partiality on the part of the authors of these sagas, and shows that different interests, and perhaps different points of view, produced absolutely conflicting accounts of the same persons and events.

The analysis of Chapter XI leads to the conclusion that Freydis's expedition was not, as represented in *Gþ*, an independent one, but that it formed part of Karlsefni's expedition, as represented in *ER*. The events related in *Gþ* under Freydis's voyage may perhaps have taken place at Straumfiord, while Karlsefni was at Hóp, or during the last winter of their stay at Straumfiord.

Summary

It has been shown how uncertain is the historic foundation on which Storm's chronology is established. It would, in fact, be easy to advance a different chronology, which would

be equally consistent with the sagas. As to Bjarni's account, we must admit the possibility of its truthfulness.

Examining Storm's criticisms of *Gþ* point by point, they are found to be of little weight. *ER* undoubtedly ranks higher than *Gþ* as a literary composition, and for this reason will appeal more to the Icelandic scholar. *Gþ* is post-classic, its origin is unknown, and it contains errors that reveal the author's ignorance and carelessness in certain respects. All this does not prove, however, that the matter contained in *Gþ* is of intrinsically smaller value than that in *ER*. *Gþ* is, on the whole, logical, and contains many original and genuine traits, showing that it must be due to an independent although unknown source of information. Its errors, improbabilities, and fabulous elements have their counterpart in *ER*.

In respect to the general framework of the voyages, it will be shown in Chapter XI that the truth probably lies between the two sagas. As previously pointed out, these accounts may be considered as reflected images fixed on paper in a confused order. Events and descriptions which belong to one account have been in several cases transferred to another by a process of interpolation and mingling, and by the resulting superposition and mixing we are left in both of the main saga narratives with a blurred picture of the events. If the subject is approached with an open mind, without any *a priori* conclusions, it will probably be admitted by most students that the two versions rank about equal as regards their historic value. This conclusion is strongly supported by the ethnographical and geographical analysis of later chapters.

CHAPTER VIII

VINLAND AND ITS ATTRIBUTES

Vinland

THE word *Vínland* (with long *í*) is generally understood to mean "the land of the wine;" but Professor Sven Söderberg* has suggested that it should be translated "the land of pastures," the first element being the word *vin* (with short *i*), meaning pasture, which is known to have been used in prehistoric times in Norway, that is, before about 800. Finnur Jónsson,† while admitting that the word *vin* occurs frequently in old geographical names in Norway, asserts that it is entirely unknown in Iceland, and that it had already become obsolete by the time Iceland was settled. It is, therefore, highly improbable, he argues, that this old, long-forgotten word should have been applied to the land newly found in the year 1000. He points out, moreover, that in *Gþ* the name is in one place written "Vijnland," bearing testimony to the length of the vowel, for vowels were not generally written double except to indicate a long sound. Finally, Thorhall Hunter obviously refers to wine in his verse: "*komat vín á grön mina*," "wine did not come on my lip," which shows the traditional conception of the land, and the traditional pronunciation of its name.

This opinion is strongly supported by the story about Tyrker in *Gþ*. Tyrker, who was a German, reported that he had found *vínber*, which in this case clearly meant grapes, for when Leif expressed doubt, Tyrker asserted that he was

**Sydsvenska Dagbladet Snällposten*, October 30, 1910.

†*Erik den Rödes Saga og Vinland*, *Historisk Tidsskrift*, Kristiania, 1911, series v, vol. i.

born in a land where there was no lack either of *vínvið* or *vínber*. That the saga-writer at any rate had real grapes in mind is further evidenced by the fact that Tyrker is said to have become intoxicated, presumably from eating the grapes, however improbable or impossible this may be in itself. We read also that they filled their boat with *vínber*, and in the next sentence it is stated that Leif named the land in accordance with its products, and called it *Vínland*. There can hardly be any doubt, then, as to the meaning of this name. It must be admitted that it means "wineland."

On the other hand, although it would appear, to judge from certain statements in the sagas, that the Norsemen actually did find grapes on some of the voyages, we cannot read the text through without our suspicion being aroused on this point. The saga-tellers evidently took special pains to substantiate the claim that wine-producing fruits were found in the new land, as the tale about Tyrker shows. Whenever *vínber* are mentioned, they occur in connection with *vínvið*, self-sown wheat, and in some cases *masur* wood, all referred to in the same conventional manner, as if they were necessary adornments of the account. It is a curious fact, already pointed out, that the word *vínber* hardly occurs in *ER*, being here replaced by *vínvið* (vines), both on Leif's voyage and on Karlsefni's voyage to Hóp. Those who, like Storm, hold that *GÞ* is unreliable, find little support in the sagas for the theory that the Norsemen saw any grapes.

Now if grapes were not found at all by the Norsemen, it will be asked why should *vínber* be mentioned so persistently in *GÞ?* and why should the name Vinland have been given to the new land? To these questions there are several answers.

One explanation, already discussed in a previous chapter, is that advanced by Nansen, who asserts that the notion of Vinland, with its attributes grapes and wheat, was borrowed from ancient legends and myths.

A second explanation is that while the accounts of the voyages were based essentially on facts, there was a tendency on the part of the explorers, and perhaps also on the part of the saga-tellers, to represent Vinland as a wonderful land of plenty, where, in particular, were found those goods which to the Greenlanders must have appeared valuable: namely, grapes, wheat, and rare wood. These exaggerations may have been due to a desire to make the voyages appear more marvellous, or they may have been made for the purpose of inducing people to settle in the new land. We have already seen that Eric the Red for this latter reason gave the name Greenland to the region which he had explored. That errors of this order are likely to occur is strikingly illustrated in the reports of Jacques Cartier's expedition, where the identical attributes of grapes and wheat are interpolated by later writers, and where the description of the land in some cases exhibits obvious exaggerations.

In the account of Cartier's voyage to the Gulf of St. Lawrence in 1534, which is given in the French edition published by Raphaël du Petit Val in 1598,* we find the following description of the Isle de Brion, one of the Magdalen group: "These islands have the best soil that we have ever seen. . . . We found them full of large trees, prairies, fields covered with wild wheat [*froment sauuage*], and with peas in flower as dense and beautiful as can be seen in Brittany, and which seem to have been sown by

* M. H. Michelant, *Voyage de Jaqves Cartier*, 1534, Paris, p. 35.

man. We saw there, moreover, great quantities of grapes with white flowers above,* strawberries, roses of Provence, parsley, and other herbs of good and fine odor."

Now, in 1867 there was discovered in the Bibliothèque Impériale in Paris a manuscript which is considered by historians to be the true and original report, *La Relation Originale*, of the voyage, given by Cartier himself.† It contains the following version of the same paragraph: "This island has the best soil that we have ever seen. . . . We found it covered with beautiful trees, prairies, fields of wild grain (*blé sauvage*), and of peas in flower as dense and beautiful as can be seen in Brittany, and which seemed to have been sown by man. There are many gooseberries, strawberries, and roses of Provence, parsley, and other good herbs of fine odor." It will be noticed that no mention is here found of grapes or wheat. The reference to grapes recurs, moreover, in the edition of Petit Val, not only in case of Isle de Brion, but also in the description of Prince Edward Island and Chaleur Bay. We find there mentioned "white and red grapes with a white flower above,"‡ instead of "white and red gooseberries" in Cartier's *Relation Originale* (cf. Chapter X). It seems certain that these changes in the original report were made by some early editor of the account. The persistency with which the word grapes (*raisin*) was interpolated in the Petit Val edition is curiously analogous to the repeated occurrence of the term *vínber* in *Gþ*.

We shall now give the description of the same island or

* *L'on y voyoit aussi grande quantité de raisin ayant la fleur blanche dessus.*

† H. Michelant and A. Ramée, *Relation Originale du Voyage de Jacques Cartier au Canada en* 1534, Paris, 1867, p. 19.

‡ *Raisin blanc et rouge ayant la fleur blanche dessus.*

islands by later authorities, and it will be seen that even Cartier's original report contains gross exaggerations. Nicolas Denys * writes in 1672: "Returning to our islands Brion and Magdalen, they are but rocks covered by some pines mixed with birch trees." In a recent description by John M'Gregor † we read: "The soil of these (Magdalen) islands . . . yields barley, oats, and potatoes; and wheat would likely grow, but the quantity of soil fit for cultivation is no more than the fishermen require for potato gardens, and a little pasture. Some parts are covered with spruce, birch, and juniper trees; others are formed into sandy downs, producing but grass; cranberries, juniper berries, and various other wild fruits are abundant. A few miles to the north, Brion and Bird Islands are situated. Multitudes of aquatic birds frequent them for the purpose of hatching." If the relation of Cartier, written on the voyage or immediately after, could be thus exaggerated, it must be admitted that the sagas, or some of them, written down long after the voyages took place were liable to suffer from the same defect.

Another example of this habit of associating the existence of grapes with the conception of richness occurs in the work of Nicolas Denys, referred to above. Denys deprecates the prevailing tendency of people to condemn a new land at once if it does not yield wine. He explains at length that other things are far more important and necessary to the settlers in a new country, but adds that, in spite of this criticism, La Nouvelle France (as the new colony in America was called) produces a native vine, and that the grape ripens there to perfection.

* *Natural History of the Coasts of North America*, Toronto, 1908.
† *British America*, 1833, I, 474.

A third explanation of the origin of the name Vinland and of the mention of *vínber* is that the Norsemen may have found some fruit which they confused with the true grape, or, perhaps, that the term *vínber* was used loosely by them to mean, not only the true grape, but also certain other berries. We are thus led to inquire into the use and meaning of the term.

The name "Vinland the Good" (*Vínland hit Goða*) occurs in most of the Icelandic sources, including *ER*, where it is used in connection with Karlsefni's voyage. It does not occur anywhere in *GÞ*, nor in Ari Frode's *Islendinga Book*, nor in Adam of Bremen. The epithet "the Good" may have been adopted in order to distinguish the Vinland of the Icelanders from Vendland on the Baltic, which was sometimes called Vinlandia.

Vínber

As long as no positive proof exists that the term *vínber* has been wrongly inserted in the sagas, the correct interpretation of this word is of considerable interest on account of its intimate connection with the geographical aspect of the problem. Wild grapes occur all along the Atlantic coast of America as far north as the southern part of New Brunswick (Lescarbot); but it seems doubtful whether they were ever found in Nova Scotia, and it is certain that they were not found in Newfoundland or Labrador. If, then, *vínber* means grapes, and they were actually found, we at once obtain a northern limit for the latitude of Vinland.

Storm held that *vínber* meant grapes, and Dr. Gudbrand Vigfusson was of the same opinion.* It has already been

* *Icelandic English Dictionary*, Oxford, 1874.

shown that the term was undoubtedly used in that sense in the sagas in certain cases, and we have unequivocal evidence that it was so used also outside the sagas, as in the Old Norse Bible called *Stjórn*. In this book, which was written before the middle of the thirteenth century, we find the following passage in the *First Book of Moses*, chapter xl:

"9. I thought that I saw a vine before me" (*Ek pottiz sia einn uinuid fyrir mer*).

"10. And on the vine were three branches (*a huerium uaru III uinuidiss teinungar*); and it was as though it budded, and her blossoms shot forth; until the clusters thereof brought forth ripe grapes" (*par til er sealf uinberin róskuduz*).

"11. And Pharaoh's cup was in my hand; and then I took the grapes (*tok ek pa uinberin*), and pressed them into Pharaoh's cup and I gave the cup into Pharaoh's hand."

We have already referred to the letter which was written in 1308 by a bishop in Norway to a bishop in Greenland, where a cask of *vínber* is mentioned. It is generally believed that the *vínber* there referred to were raisins, that is, dried grapes. In any case, it is an established fact that the word *vínber* was used in a number of cases to signify the true grape, while it is not known that it was used in any other sense by the Norsemen when these voyages took place. It cannot be asserted that the word *vínber* may not at that time have had a wider meaning, comprising also certain berries, such as currants and cranberries, but it is extremely unlikely that the Norsemen should confuse these with the ordinary large European grape, with which they were probably well acquainted.

The opinion that the word *vínber* was used by the Norsemen to signify berries other than the true grape has been

advanced by the botanist, Professor M. L. Fernald, who in an interesting essay* has attempted to identify the *vínber*, the "self-sown wheat," and the "*masur* wood" of the sagas with plants and trees indigenous on the coasts of the North American Continent and in Newfoundland. For the present we shall deal only with his study of the term *vínber*. Fernald states that "a search of botanical writings from the earliest herbals to the latest publications upon the colloquial names of plants in Scandinavia and Great Britain fails to reveal any use of either the name *vínber* or Wineberry for the grape," but we have already shown that the term *vínber* was actually used to signify grapes in Old Norse, and Björn Haldorson's dictionary of the Icelandic language gives no other translation of the word. Hence the omission of the early botanists, to whom Fernald refers, simply shows, either that they did not know the Icelandic language, or that they did not choose to include the Icelandic terms in their list of botanical names.

The berries to which the Norsemen, according to Fernald, most probably referred when using the term *vínber* are the following. First: red currants, of which two kinds are found on the eastern coast of North America. Of these the *ribes triste* resembles the ordinary European red currants (*ribes rubrum* and *ribes vulgare*), which by the Norwegians are called *vinbær*, by the Swedes *röda vinbär*, and which are still known as "wine-berries" in the northern counties of England and Scotland. Second: black currants (*ribes lacustre*), which are likewise found on the coast of eastern North America. The European variety is *ribes nigrum*, which is known in northern Scotland as "wine-berry," in Sweden

* *Notes on the Plants of Wineland the Good* (*Rhodora*, February, 1910).

as *svarte vinbär*. Both red and black currants were confused by early botanists with the corinth (*vitis*) of southern Europe. From both currants wine was made in the north and elsewhere. Third: mountain cranberries (*vaccinium vitis-idæa*), which abound from northern Labrador southward to Newfoundland and the Gulf of St. Lawrence, and around the coast of Nova Scotia to Penobscot Bay in Maine. It is the most important berry in the northern half of Labrador. Southward of lat. 51° it is found only on the summits of barren rocky hills, but to the north, as open barren spaces increase, it soon becomes abundant, and about Hamilton and Big Rivers it is everywhere very plentiful. The berries are gathered annually by the inhabitants before the ground is covered by snow, for use during the long winter. The fruit is found in perfection immediately after the disappearance of the snow in the spring, and continues good for several weeks, until the juices are dried up by the sun. The European variety is known in England and Scotland as red whortleberry. By early herbalists, as late as the end of the sixteenth century, it was supposed to be a true grape, and was identified with the *vitis-idæa* of Pliny. At that time it bore in England and Scotland the name of "wine-berry." Fernald adds, however: "In none of the modern Scandinavian floras is the writer able to find the name *Vinbaer* used for *vaccinium vitis-idaea*, and it is possible that the name [wine-berry] was used only in England and Scotland, but in many different regions in the North, wine, brandy, or other alcoholic beverages were formerly prepared from the berries."

Fernald comes to the conclusion that the *vînber* of the early Norsemen was either the red or black currant or the mountain cranberry. In determining the exact species gath-

ered by the Norsemen in Vinland, Fernald finds a clue in the following statement in *Gþ* regarding Leif's voyage: "It is said that their after-boat was filled with *vínber*. A cargo was now cut for the ship, and when the spring came, they made ready and sailed away." Fernald argues that, since mountain cranberries are so abundant on the coasts of America most likely to have been visited by the Norsemen, and since spring is the very season where this fruit is in its prime, we may conclude that the *vínber* of the sagas was most probably the mountain cranberry (*vaccinium vitis-idæa*), which bears in its specific name a token of its long confusion by early botanists of northern Europe with the grape, and, at least as late as 1633, bore the folk-name "wyneberry" in England and Scotland. It must here be observed that the confusion of the early botanists to which Fernald refers was not between the cranberry and the grape in general, but only its specific variety *vitis-idæa*, the so-called "zante currant," a very small-sized grape no larger than a pea, which reached northern Europe in its dried state as a kind of small raisin. The cranberry could not, of course, be confused by any one with the ordinary large European grape (*vitis vinifera*). Apparently, Fernald, like Storm, overlooked the fact that the saga does not state that *vínber* were gathered in the spring, but merely that the ship sailed in the spring.

If, now, we review Fernald's investigation, we find that he has established the following points. Early botanists, at least as far back as the end of the sixteenth century, confused the currants and the mountain cranberry with the corinth (*vitis-idæa*) of southern Europe — not with the ordinary large grape (*vitis vinifera*). The name *vinbær* is now used in Scandinavia,

and is known to have been used there as far back as the eighteenth century, for currants, but not for cranberries. The name "wine-berry," or "wyneberry," is known to have been used in England and Scotland for both currants and cranberries, but we do not know how far back. All three kinds of berries, that is, red and black currants and cranberries, were and are still used for making wine.

The correctness of Fernald's theory evidently depends largely on whether the term *vínber* was already applied to such berries at the time of the Norsemen's voyages to America. On this point, however, his essay gives no information; it merely shows that the term was so used as far back as the eighteenth century. Now, it appears that *vínber* originally meant the true grape from which wine was made, and it seems likely that the extension of this term to comprise other berries took place when these berries commenced to be used for making wine. It is, therefore, of interest to examine when this may have taken place.

According to Schübeler, the red currant grows wild all over northern Europe, and on the Scandinavian peninsula as far as lat. 70° 30′. It seems certain that the cultivation of this berry spread from Scandinavia to central Europe, and it is said that the Scandinavians brought it to Normandy in the Viking Period, whence its name *uva transmarina*, often used by botanists in the fifteenth and sixteenth centuries.*

Gunnerus (1766) says that the people of Kristiania prepared wine from red currants, but in *Bishop Paul's Saga*†

* For the information contained in this paragraph the author is indebted to Mr. Zeiner-Lassen, horticulturist of Helsenore, Denmark.

† *GHM*, II, 764.

we find a much earlier record of the preparation of wine from berries of a similar kind. In this saga we are told that on a visit of Bishop Jón from Greenland to Bishop Paul in Iceland, in the year 1203, "Bishop Jón taught people [in Iceland] how to make wine from *krækiber* by a formula which King Sverre had given him. But it happened that the next summer was an off year for berries in Iceland; still a man, by the name of Eirékr, who lived on a farm called Snorrastadir, near Skálholt, succeeded in making some good wine that same summer." The *krækiber* here referred to is *empetrum nigrum*, the black cranberry of North America.

It seems unlikely that the knowledge of the preparation of wine from such berries should have existed generally in Norway a long time before it was brought to Iceland, and it is, therefore, at least improbable that the name *vínber* was applied generally in Scandinavia to berries other than the grape at the time of the Vinland voyages. We see that it was not, in any case, applied to *krækiber*.

Taking into account all the points of the foregoing discussion, it appears that if the Norsemen have applied the term *vínber* to currants or cranberries, it has been as a conscious exaggeration. Later saga-writers may have added corroborative details of their own invention with the purpose of proving that real grapes had been actually found.

Vínviđ

The term *vínviđ*, which means vine, occurs frequently both in *Gþ* and in *ER*. In the former it is generally mentioned together with *vínber*, but in *ER* only *vínviđ* is mentioned (except in case of the Scotch runners). In *Gþ* it is stated that *vínviđ* was gathered, as if it were an article of great

value. It is not easy to understand why these vines were gathered, but one explanation may be suggested here.

The Norsemen used largely ropes and cords of hide, but this material is not well suited when it is exposed to wetness. Thus, for tying the bottom planks of the ships to the frames, we know that roots or withies were used, as in the Gokstad ship. The author has tested wild grapevines. As long as they are fresh, they are exceedingly strong and flexible. Vines, even of from one-quarter to three-eighths of an inch in diameter, will stand bending to an arc of a radius equal to the diameter without breaking. If the vines are kept moist, they will preserve their strength and flexibility. Thus vines that had been left outdoors an entire winter were found to have lost nothing in respect to these qualities, while vines which had been kept dry indoors were brittle and would stand bending to only a small angle before breaking. Whether *vínvið* were true grapevines or other vines, it seems possible, therefore, that the Norsemen may have used them as binding material for certain purposes.

Self-Sown Wheat

Self-sown wheat is mentioned three times in *ER.*: first, on Leif's return voyage from Norway ("There were self-sown wheat-fields and *vínvið* growing there"); second, on Karlsefni's expedition, where one of the Scotch runners brings an ear of newly sown or self-sown wheat; third, on Karlsefni's expedition in Hóp ("They found there on land self-sown wheat-fields on the low land, but *vínvið* where the ground was high"). Self-sown wheat is not mentioned in *Gþ.* We find no statement in the sagas that the Norsemen made any use of this wheat, or that they carried it home

with them to Greenland. As in case of the grapes, we must admit as a possible explanation that the wheat was attributed arbitrarily to the new land as a testimony to its richness.

Though most authorities agree that the mention of self-sown wheat is founded on some fact, opinions differ as to what the real foundation was. Some take the self-sown wheat to be Indian corn, but Storm and Reeves are of the opinion, first advanced by Schübeler, that it was the American wild rice. Professor Fernald maintains that neither Indian corn (maize) nor wild rice was likely to have been mistaken by the Norsemen for wheat. Indian corn differs widely from wheat, and even wild rice differs considerably in being a much larger grass, with much wider leaves than wheat, and with the flowers and grains in a loose open panicle twelve to sixteen inches long and two to six inches in diameter. The grass which, according to Fernald, is most likely to have been referred to by the Norsemen as self-sown is *elymus arenarius*, the Icelandic *melr*. Fernald's arguments are briefly as follows. The wild *elymus arenarius* has been used as wheat by the Icelanders since the discovery of their island. It occurs in Iceland, in Greenland, and from eastern Baffin Land southward along the coast of Labrador in great abundance to the Gulf of St. Lawrence. It is likewise found abundantly in Newfoundland and on the continent locally to Penobscot Bay, Maine, reaching its extreme southern limit on the Isles of Shoals (off Portsmouth, New Hampshire). The places where this strand-wheat grow are described as looking from a distance like fields of grain.*

When we consider the facts that all attempts made by the

* Peter Kalm, *Reise nach dem nördlichen Amerika*, 1764.

Icelanders to cultivate corn (wheat) in the neighborhood of Reykjavik have failed; that the Icelanders in the eleventh century had a wild grain which they took great pains to harvest, and at the present time are largely dependent upon the seeds of the wild *elymus arenarius*, which many prefer to the imported wheat; and that this grass bears in Iceland and Scandinavia such folk-names as *vild hvede* (wild wheat), *strandhvede* (strand wheat), *hvedegræs* (wheat-grass), *sandhavre* (sand oat), *melr* and *melgræs* (meal-grass), there can be no question, Fernald concludes, that the *hveiti* of the early Norsemen was *elymus arenarius*.

Finnur Jónsson, on the other hand, maintains that *elymus arenarius* has been called *melr*, and nothing but *melr*, by the Icelanders from the tenth century, and it is not likely, he argues, that in Vinland they should have called it wheat. Moreover, the other names for *elymus arenarius* mentioned by Fernald are all foreign to Iceland.

On the whole, then, it seems reasonable to conclude that the *sjálf-sánir hveitiakrar* of the sagas are of the same order as the *froment sauuage* and *blé sauvage* of the French explorers some five hundred years later; that is, that they are either a pure product of the imagination, or else that they refer to certain grasses which, on first view, resembled wheat, but of which nothing was heard later because they proved of no value.

Captain Cartwright (1771) mentions that near Chateau Bay on the Labrador coast of the Strait of Belle Isle, in the month of May, he saw fourteen deer (caribou) feeding upon wild rye, which appeared through the snow.

Masur Trees

Masur trees or *masur* wood, the third of the attributes of Vinland, is mentioned only twice in the sagas, namely in *ER*, on Leif's return voyage from Norway, where it is stated: "there were also those trees which are called *masur;*" and in *Gþ*, on Karlsefni's voyage to Norway, where he sells his house-ornament, which was of *masur* wood from Vinland.

That the *masur* tree is a birch seems to be conclusively proved by Fernald, of whose discussion of this question we shall here give a brief abstract. When we turn to the writings of Scandinavian botanists, we find the name *masur* applied only to the birch. Thus Linnaeus, writing in 1737 of the birch trees of Lapland, says: "Knobs, tuffs, protuberances, or prominences are often put forth in old birches from the middle of the trunk, which are firmer than the rest of the wood, since they consist of fibres twisted and entwined (*masur-lupne*). From these they [the Laplanders] make their small vessels for food and drinks."

Schübeler, in his *Pflanzenwelt Norwegens*, speaks of the *masur* knobs in similar terms, and says that they are apt to have a more or less well-marked hemispherical form, and may reach a diameter of from one to two feet; they were used in olden times in Norway for bowls and other vessels. In the *Saga of Harald Haardraade* there is an account of a *masurbolli* (drinking-bowl) in the year 1086. Such *masur* wood was rare and very highly prized by the early Norsemen.

Fernald concludes that the tree referred to in the sagas is most probably the white birch, which in America is represented by the canoe birch (*betula alba* or *papyrifera*). The

canoe birch is found on the coast of Labrador, except on exposed mountains and headlands, to about lat. 58°. About Hamilton Inlet birch is common, and, at the head of the Inlet, trees up to ten inches in diameter are not uncommon. It likewise occurs in Newfoundland and Nova Scotia, where it reaches from fifty to sixty feet in height and two feet in diameter. It extends southward on the coast to Long Island.

When Leif states that he has seen *masur* trees, he does not therewith assert that he has seen *masur* knobs, but simply those trees, that is, birch trees, which occasionally present this feature. Since birch is found abundantly on the coasts which Leif is likely to have visited, there is nothing strange in this statement. It is not, on the other hand, excluded, that *masur* trees may have been added by the explorers or by later saga-tellers to the other attributes of Vinland in order to emphasize its wealth and wonders.

Summary

We have to distinguish clearly between the interpretation of the terms discussed in this chapter and the reasons why these terms were used in the sagas.

I. As to the interpretation of the terms, we may sum up as follows: (1) The term Vinland is undoubtedly derived from the word *vín*, wine, and may be translated Wineland. The epithet "the Good" was perhaps added in order to distinguish it from Vendland, which was also called Vinlandia. (2) The term *vínber* is known with certainty to have been used in the Old Norse language to mean grapes, but there is a possibility that in the sagas it is sometimes, as an exaggeration, applied to certain berries, such as currants or

cranberries. (3) The term *vínvið* means the vine of *vínber*, and its specific meaning will therefore depend upon what interpretation is put upon the name *vínber*. (4) The self-sown wheat refers to some wheat-like grass, but it seems impossible to determine with certainty which kind of grass was meant. (5) The *masur* tree may with tolerable certainty be identified with the birch, probably the canoe birch of America and the *valbirk* of Norway, which sometimes exhibit the feature of protuberances or knobs, called *masur* knobs.

II. The most probable explanations why the terms, as here defined, occur in the sagas, may be grouped under three heads. (1) The Norsemen may actually have seen wild grapes on the coasts of America. (2) They unquestionably saw cranberries, wheat-like grasses, and birch trees, which may have given rise to their mention of *vínber*, self-sown wheat, and *masur* trees. (3) The name Vinland, as well as the three attributes, grapes, wheat, and *masur* trees, which are attached to it in the sagas, may have been invented without any real foundation whatever, either by the discoverers themselves or by later saga-tellers, in order to adorn their tales or to emphasize the good qualities of the new land. As will be shown later, the first of these explanations seems to apply in particular to Leif's and Thorvald's voyages, the second or third to Karlsefni's voyage.

CHAPTER IX

ESKIMOS OR INDIANS

ON account of the uniformity in the mode of life of the Eskimo tribes of northeastern America, it is desirable to make a few general remarks applicable in common to the different tribes of that region.*

The life of the Eskimos and their distribution are largely influenced by the existence and extent of the even land-ice formed during the winter. During the greater part of the year the land-ice affords the only means of communication — by dog-sled — between the tribes, and the seal, which constitutes the principal means of subsistence of the Eskimos, takes to those parts of the coast where extensive floes are found. The extent of the land-ice is dependent chiefly on the configuration of the land and on the strength of the currents. On shores exposed to strong currents, extensive floes can be formed only in sheltered places, such as deep fiords and large bays; on open coasts, where strong currents prevail, pack-ice forms a hindrance to hunting and communication. Since the countries inhabited by the Eskimos do not produce sufficient vegetation to sustain human life, the Eskimos are forced to rely chiefly on animal food. Their mode of life is, therefore, regulated by the migrations and the accessibility of game and fish, which compel them to move their habitations from time to time.

The seal, which is found in so great abundance in Arctic America, is the chief factor that enables the Eskimos to live in this sterile and inclement region. The skin of seals

* These remarks are based chiefly on *The Central Eskimo*, by Dr. Franz Boas, Smithsonian Institution, Bureau of Ethnology, Washington, 1888.

furnishes the material for summer garments and tents; their flesh is the chief food; and their blubber serves as fuel during winter. Next in importance is the reindeer, from whose heavy skin winter garments are made.

Seals are plentiful in the spring, and when the rivers and ponds break up, salmon are easily caught in shallow rivers. During summer, when the snow has melted away, the Eskimos in scattered bands undertake hunting trips inland to obtain skins of the reindeer and meat of the fawns, which is always highly prized. Now walrus also arrive; ground and harp seals are hunted from kayaks. Formerly the whale also was hunted in koneboats. Birds are abundant. Shrubs are used as fuel for cooking purposes. Before the sea begins to freeze over, the Eskimos return from their deer-hunting and gather at places where they find the best chances to obtain food in the autumn. The colder it grows, the more the Eskimos are confined to their huts, and the more dependent they become on the seal. When the smaller bays are closed by ice, the Eskimos visit the edge of the newly formed floe in order to harpoon seals. During the winter, after the fiords and channels are frozen over, the seals resort to the sea, where they are hunted at the breathing-holes which they scratch in the floe-ice.

The Greenland Eskimos

The first mention of the Greenland natives is found in Ari Frode's *Islendinga Book*. It is there stated that when Greenland was first settled by Eric the Red, they found "both east and west in the country, the dwellings of men, and fragments of boats, and stone implements, from which it can be seen that that kind of people had been here who inhabit

Vinland, and whom the Greenlanders call Skrælings." This passage was written at least one hundred years after the first Vinland voyages took place. It was clearly the nature of the remains and implements found by the Norsemen that led them to decide that these objects belonged to the same kind of people as they had met in Vinland.

In the *Flóamanna Saga* it is related that natives (there referred to as "trolls," supernatural beings) were seen by Norsemen when shipwrecked on the east coast of Greenland about the year 1000 (see page 72).

In the *Historia Norwegiæ*, written in Norway in the thirteenth century, we find the following statements: "On the other side of the Greenlanders, towards the north, the huntsmen met some small people called Skrælings. When these people are hit by weapons their wounds become white without blood while they are alive, but when they are dead, the blood will hardly stop flowing. But they lack entirely the metal iron; they use the teeth of sea-animals for their spears and arrows and sharp stones for knives." However fantastic this account may appear, it indicates that the Norsemen had at that time met the Eskimos, and had had fights with them. Probably the reference is to the northern part of West Greenland.

The etymology of the name Skræling is uncertain. Thalbitzer states* that it is probably an imitation of Karāleq or Kalaleq, used by the Eskimos on the middle and southern part of the west coast of Greenland as a common name for themselves. The Eskimos in Labrador knew the name Karāleq when the Moravian Brethren came to them from Greenland about 1760.

* *Videnskabernes Selskabs Forhandlinger*, Copenhagen, 1905.

The information found in the sagas and elsewhere about the Greenland Eskimos during the time of the Norse colony is, on the whole, remarkably scanty. Some have explained this silence of the accounts by the indifference or contempt with which the Norsemen regarded the Skrælings. This opinion, however, is contradicted by the fact that where the accounts do mention the Skrælings, great care and minuteness is employed in describing them; whenever traces of them are found, it is mentioned and discussed. We rather get the impression that the Norsemen were intensely interested in these people.* And if, during the first two centuries of the settlement in Greenland, they had met the Eskimos frequently, and had known them intimately, we should expect to find detailed accounts of them in the sagas, as is the case in the reports of the Vinland voyages.

Probably the Greenland Eskimos were in former times very nomadic in their habits. According to Thalbitzer,† the different dialects of the Eskimo language in Greenland suggest that several immigrations occurred from the continent across Smith Sound, each tribe having had its own dialect. It seems likely that the remains found by the Norsemen on their first arrival in Greenland were left by the early, wandering tribes, who proceeded up the east coast, where they may have settled in the Angmagsalik district. Possibly some tribes returned to the northern part of the west coast, where the natural conditions were more favorable to their mode of fishing and hunting. Later, in the fourteenth century, a fresh immigration seems to have taken place, and

* See the report of the expedition to the far north in 1266.

† *The Eskimo Language*, *MG*, XXXI.

it was probably the subsequent advance towards the south that led to conflicts with the Norse Greenlanders.

Whatever may have been the cause of the quarrels between the Eskimos and the Norsemen, it seems certain that by nature the Eskimos were peaceful. Thus John Davis, on his first voyage to Greenland in 1585, states that he found them to be "very tractable, voyde of craft or double dealing, and easie to be brought to any civilitie or good order." Davis treated the Eskimos with great fairness and kindness, and all went well on this voyage. The Eskimos, however, were very thievish, and on Davis's second voyage this seems to have spoiled their friendly relations in some measure.

James Hall, who served as pilot on the Danish expedition to Greenland in 1605, tells how the Eskimos on one occasion attacked the ship by throwing stones with their slings from the shore. They used their slings so effectively that no man could remain on deck until shelter was provided by lacing sails to the height of two men along the sides. Hall says in his report: "They be very active and warlike, as we did perceive in their skirmishes with us, in using their slings and darts very nimbly." On a later expedition, in 1612, Hall was killed by an Eskimo, probably in revenge, because on the previous voyage Hall had kidnapped some of his friends or relatives.

We find, in fact, in nearly every case a satisfactory explanation of the hostile attitude of the Eskimos, in that the Europeans, on practically all of their expeditions, treacherously and brutally kidnapped one or more of the natives, whom they carried away to Europe. While the Eskimos showed great fighting spirit if provoked by unjust treatment, they were friendly and helpful if treated with kind-

ness. This opinion is fully confirmed by later experience with them.

Hans Egede, a Norwegian missionary, was the first man to go to Greenland for the sake of the natives, and without any selfish motive. He was also the first European settler after the days of the old Norse colony. He arrived in Greenland in 1721 and remained there for fifteen years, learned the language of the natives, ministered to their wants, introduced the Christian religion among them, and completely won their confidence and friendship. His description of the Eskimos * in his work on Greenland, published in 1758, is the most reliable and complete up to that time. We shall here give an abstract of this description.

The Eskimos spend the whole summer at the head of the fiords, scattering in small bands inland; where they hunt reindeer, bears, hares, and foxes. On the sea they hunt whales, seals, and walrus, and also catch fish and sea-birds. They use bows and arrows in hunting the deer, but darts and harpoons on the sea. The Eskimos in northern Greenland use dogs to drag their sledges on the ice in the winter.

There are two sorts of Greenland boats. The kayak is used only by the men, chiefly in hunting seals and sea-birds. It is small, with pointed ends, eighteen feet long and from two to two and a half feet broad. It has a round hole in the middle, just large enough for a man's body. The boat is made of sealskin stretched on a light framework. The man sits in the hole, his watertight shirt being laced or tied to the skin which covers the deck, so that no water can enter, and thus he forms one with the kayak. A double paddle, about six feet long, is used.

* *Description of Greenland*, London, 1818 (translation from the Danish).

Kaneboat

By courtesy of Capt. D. Bruun

Egede's Picture of Eskimo Houses and Boats

The other kind of boat is large, open, and flat-bottomed. It is called *umiak* or *koneboat* because it is generally rowed by the women (*kona*), who use ordinary long oars. This type of boat is employed chiefly for transportation and for whale hunting. It is made of sealskin like the kayak, and is provided with a mast having a yard and sail, used when going before the wind. The sail is made of sealgut.

The Eskimos have one dwelling for winter and another for summer. The winter habitation is a low hut built of stone and sod, from six to nine feet high, with a flat roof. Windows, made from the gut of the seal, are fitted on one side. Several families live together in one house. The entrance is very low. In the summer the Eskimos live in tents built of long poles, covered with reindeer or seal skin, of conical shape like a sugar loaf.

They are strong and well built, short rather than tall, inclined to be stout. They have broad faces, thick lips, and flat noses. Their hair and eyes are black, and their complexion a very dark tawny, "although some are rather fair." They can stand hunger for a great length of time. They are commonly of a phlegmatic temper, and live peaceably together, observing a regular and orderly behaviour to one another. They have a great abhorrence of stealing among themselves, yet they do not hesitate to lay hands upon anything belonging to foreigners.

Their clothes are made with great skill and taste, chiefly of reindeer and seal skins. The men dress in a coat with the hair on the inside; it reaches to the knees, and is provided with a hood to cover the head and shoulders. Sometimes the coat ends in a point in front and behind. The breeches are short, going from the knees to the loins. Over

the coat is carried a large frock, made of sealskin without hair, dressed and tanned, which serves to keep the water out when they go to sea. Between the frock and the coat they wear the shirt referred to above, made of sealgut, the main object of which is to secure watertightness. The stockings are of reindeer or seal skin, and the shoes are of sealskin, fitting well on the feet. The only difference between the dress of the men and the women is that the women's coats are wider and higher on the shoulders; the hoods also are higher and larger. The children are carried in the wide coats on the back. The women have very long and thick hair, which they braid and tie up in a knot on the head. They are often tattooed with black stripes on their faces, arms, and hands.

The Eskimos generally eat flesh raw, but sometimes they boil it or dry it in the wind. Fish are caught in the spring and dried so as to be used for winter provisions. In the fall they catch seal, bury the flesh under the snow, and in the winter they dig it up and eat it raw and frozen.

The dead are buried in graves made of stones thrown together in a heap.

The Eskimo language presents a few remarkable identities and resemblances with the Old Norse language. Thus the word *kona*, a woman, used by the Eskimos in Egede's time, was used in the same sense by the Norsemen. A porpoise, in the Eskimo language *nisa*, was in Old Norse called *hnîsa*.

We may supplement this description of Egede with some remarks about the present day Eskimos, which probably apply also to those of former times. In South Greenland, that is, south of Holstensborg, the Eskimos do not keep any

Eskimo Woman from Greenland

By courtesy of Capt. D. Bruun

Eskimos Carrying Koneboat Overland

By courtesy of Capt. D. Bruun

dogs to drag their sledges, as in North Greenland, where the ice is more suitable for this mode of transportation. The Eskimos in South Greenland make their living on the sea, and dwell on the outer skerries and islands, while those in North Greenland live at the bottom of the fiords, where ice, which is favorable for catching seal, remains the greater part of the year. In migrating or wandering from place to place, they often carry their koneboats overland from one fiord to another. On such expeditions the boats are used for shelter, being placed on the ground inverted or on the side, and the Eskimos sleep under them.

In former days, reindeer were, next to seals, the most important means of subsistence among the Greenland Eskimos.

The Eskimos in Baffin Land*

The earliest information about these Eskimos comes from Martin Frobisher, who, in the years 1576–78, made three voyages to Frobisher Bay in Baffin Land. His description of these natives is almost identical with that given by Egede of the Greenland Eskimos. Frobisher tried to win their friendship, but it appears that the good relations were disturbed by the Eskimos, who, on his first voyage, treacherously entrapped and killed five of his men. The following abstract of Frobisher's description supplements and corroborates that given by Egede.

The Eskimos lived in tents during the summer, but in caves in the earth during the winter. The winter dwellings were made two fathoms underground, round like ovens, and

* *See* Pinkerton, *Voyages and Travels*, London, 1812; Hakluyt, *The English Voyages*, vol. v.

connected by holes. They were commonly located at the foot of a hill, which shielded them from the cold winds, and the doors opened towards the south. The roofs were made of whalebone covered with sealskins.

The Eskimos were strongly built and very warlike. They were clad in skins of beasts, but they also had garments of feathers, made of the cases of fowls, finely sewed together. Their weapons were darts, bows and arrows, and slings. They were sullen of nature, desperate in their fight, and ravenous in their manner of feeding. They ate raw flesh and fish. They used sleds drawn by dogs. The men wore their hair rather long and disorderly; they had but thin beards. The women had long black hair, tied up in two loops, showing on each side of the face, and the rest folded up in a knot in decent order; their faces were marked or painted with small blue spots. They carried their suckling children on the back.

It appears that the sling is not used by the modern Eskimo, for it is not mentioned by Egede, Rink, or Boas.

The following account of how trading was carried on with the Eskimos is given in the report of Frobisher's second voyage in 1577:*

"And thus marching towards our boats, we descried certain of the country people on the top of Mount Warwick, with a flag wafting us back again, and making great noise, with cries like the mooing of bulls, seeming greatly desirous of conference with us; whereupon the general (Frobisher), being therewith better acquainted, answered them again with the like cries; whereat, and with the noise of our trumpets, they seemed greatly to rejoice, skipping, laugh-

* Pinkerton, *Voyages and Travels.*

ing, and dancing for joy. And hereupon we made signs unto them, holding up two fingers, commanding two of our men to go apart from our companies, whereby they might do the like. So that forthwith two of our men and two of theirs met together, a good space from company, neither party having their weapons about them. . . . Their manner of traffic is thus: they do use to lay down of their merchandize upon the ground, so much as they mean to part withal, and so looking that the other party with whom they make trade, should do the like, they themselves do depart, and then, if they do like of their part, they come again, and take in exchange the other's merchandize; otherwise, if they like not, they take their own and depart."

When thereafter Frobisher's party was about to go away, the Eskimos earnestly called them back with tokens of affection, and Frobisher now seized the opportunity to kidnap one of the natives, whom he took on board the ship.

According to Dr. Boas,* the Baffin Land Eskimos in former days lived during the winter in solid houses constructed of stones and sod. Many ruins are found of such houses, often dug into the side of the hills, as described by Frobisher, with a long stone entrance excavated and partly covered over. These Eskimos also value soapstone very highly, and of it they manufacture lamps and pots; but it is found in only a few places and, generally, in small pieces. It will be remembered in this connection that the Norse Greenlanders used soapstone extensively for their utensils.

* *The Eskimos of Baffin Land and Hudson Bay*, Bull. Am. Mus. Nat. Hist., vol. xv, New York, 1901. Cf. H. P. Steensby, *Eskimokulturens Oprindelse*, Copenhagen, 1905.

The Labrador Eskimos

One of the distinctive traits of the Eskimos, by which they have been characterized both by Europeans and by Indians, is that they eat raw flesh. Hence their very name, "Eskimos," which in the Algonquin language means "eaters of raw flesh." The Eskimos call themselves *Innuits* (men or human beings), while, at least in Labrador and Greenland, they call the white men *Qavdlunaqs* or *Kavlunaits*.

The early explorers of Labrador nearly all tell the same story about the Eskimos. They first tried to establish friendly relations with them, and all went well until, unexpectedly, when the Europeans were taken off their guard, the Eskimos treacherously made fierce attacks upon them. An English expedition, which put into a cove on the Labrador coast in 1606, had two men killed by the Eskimos, who then attacked the ship. They were described as "little people, tawny colored, thick haired, with little or no beard, and man-eaters."* From the time of the English occupation there are accounts of how the Eskimos would fall upon the fishermen in the Strait of Belle Isle at night or in foggy weather, uttering frightful yells, and how they would attack and murder the fishermen in the most barbarous manner. So bad was the reputation of the Eskimos that, Cartwright says, they have always been accounted the most savage race of people upon the whole continent of America.

As a remarkable contrast to these reports stand the later accounts of modern travellers and settlers, who all describe the Eskimos as a most gentle and good-natured people. This shows how cautious one must be in drawing conclusions as

* W. G. Gosling, *Labrador*, New York, 1911.

to the character and disposition of the same people at different times and under different circumstances.

As to the geographical distribution of the Eskimos on the Atlantic coasts of America in former days, it is difficult to arrive at a definite conclusion. It appears doubtful whether the Eskimos permanently inhabited the southern coasts of Labrador or Newfoundland before the arrival of the Europeans. Later they appeared in these regions, but perhaps chiefly for the purpose of trading and stealing. Cartier does not mention having met any Eskimos on the coasts of southern Labrador which he visited. This problem, which is so important in the study of the Norsemen's voyages, must await further ethnographical investigation before it can be definitely solved.

When the Moravian Brethren commenced their work in Labrador, about the middle of the eighteenth century, there were about three thousand Eskimos on the Labrador coast, but it seems probable that they were more numerous formerly. At first they used to move about a great deal, but by degrees they were induced by the Brethren to adopt less nomadic habits and to settle permanently.

The Eskimo language is spoken in different dialects from the east coast of Greenland to the Asiatic side of Behring Strait, but the extremes do not differ more than, for instance, English and German. According to Thalbitzer,* the language of the Labrador Eskimos seems to stand between the dialects of the Mackenzie and the Greenland Eskimos with respect to sound system, but yet it most resembles South Greenlandish and Middle Greenlandish. The four words of the Markland Skrælings reported in *ER*—*Vætilldi*, *Vægi*

* *The Eskimo Language*, *MG*, XXXI.

(*Uvægi*), *Avalldamon*, *Avalldidida* (*Vælldidida*)—are, he thinks,* undoubtedly Eskimo words or sentences, which have reached us in a somewhat distorted form. Storm took the opposite view; he asserted that the words could not be Eskimo, and by a comparison with some of the few words left us from that now extinct tribe, the Red Indians of Newfoundland, he attempted to prove that the words were Indian. Thalbitzer, however, shows that Storm's objections to the words being Eskimo have little weight, and that our knowledge of the language of the Red Indians is too incomplete to afford a safe basis for comparison.

Cartwright states that the Labrador Eskimos had, besides kayaks, also larger boats, probably corresponding to the Greenlanders' koneboats, and that they had excellent sleds, drawn by dogs. In his journal he tells how he traded with them, and obtained sealskin of various kinds, and the skins of foxes, deer, otter, marten (sable), wolf, and black bears.

There is a tradition among the Eskimos in Labrador† about a fierce race of men of gigantic size and strength, who delighted to kill people. But these men themselves could not be killed by either darts or arrows, which rebounded from their breast as from a rock. The Eskimos suppose that these giants still exist, only very far to the north.

The Indians of Labrador

There are two main tribes of Indians living in Labrador, both of the Algonquin family: the Montaignais, who dwell south of Hamilton Inlet, and the Nascopees, who dwell north of this boundary. Both are of the lowest Algonquin type;

* *Videnskabernes Selskabs Forhandlinger*, Copenhagen, 1905.

† Robinson, *Notes on the Coast of Labrador*.

they are closely related to each other, and live entirely by hunting. It appears that the Algonquins were gradually driven east and north by the Iroquois during the sixteenth and seventeenth centuries, and were thus forced against the Eskimos, with whom they were probably already at war. The natives whom Cartier met on the coast of Labrador in the Strait of Belle Isle in 1534 were probably Montaignais Indians, although it is possible that they may have been Red Indians. He describes them as follows in the *Relation Originale:*

"There are people in the said land who are fairly well built, but they are wild and savage. They have their hair tied upon the head like a handful of hay trussed up, and a nail or some other thing passed through it, and they tie some feathers on to it. They dress in skins of beasts, the men as well as the women, but the women carry the skins closer and tighter and girded about the body. They paint themselves with certain tawny colors. They have boats in which they go on the sea, made of birch bark, in which they catch many seals. After I have seen them, I feel sure that they do not live here and that they come from warmer lands, in order to catch seals and other things for their living."

Cartwright states that the Montaignais Indians never build huts, but live in wigwams.

A modern traveller, Dr. C. W. Townsend,* describes the Montaignais whom he met on the south coast of Labrador, as of a dark, olive-brown complexion, glistening in the sun as if they had been oiled, with aquiline noses, black, rather narrow eyes, in some set aslant as in the Mongolian type, and with hair also straight and black. Some show signs

* *A Labrador Spring*, Boston, 1910.

of admixture with the white race. The men, when in the prime of life, have erect wiry figures and bright, even handsome faces; while most of them are of medium height, some are noticeably tall. The infants are bound up, as all Indian papooses, in a bundle which can easily be handled. The common posture taken by these Indians is a kneeling one, with the body resting on the heels. They spend the greater part of the year in the interior, making their annual migration to the trading-posts on the coast in May or early in June when the ice goes out of the rivers, and returning in August and September. This early return to the wilds is partly in order to ascend the rivers before they are frozen, and partly to be in time for the annual migration of the caribou. Formerly Labrador was rich in caribou, beaver, and other game, but, due chiefly to the extensive forest fires and perhaps to the use of firearms, game is now relatively scarce and the Indians are often exposed to starvation.

The Nascopees have their home on the semi-barrens of northeastern Labrador, and live in a more primitive state than the Montaignais, whom they resemble in their chief characteristics.*

The Indians of Newfoundland

We have no evidence that the Eskimos permanently inhabited Newfoundland. Our earliest information about the natives of the island seems to be a brief note on a map attributed to Sebastian Cabot and now in the National Library at Paris. It is there stated that the inhabitants of the land that was discovered by John Cabot and his son Sebastian

* For further information of the Nascopee Indians, the reader is referred to William B. Cabot's *In Northern Labrador*, Boston, 1912.

Montaignais Indian of Lake St. John

By courtesy of W. B. Cabot

Nascopee Indians

By courtesy of W. B. Cabot

on July 24, 1494, and called by them St. John Island (probably the Avalon peninsula), dressed in the skins of animals. "They use in war bows, arrows, darts, lances, wooden clubs, and slings." This note is of great interest because it seems to show that the northeastern Indians also, or at least those in Newfoundland, formerly used slings.

Mr. W. H. Babcock* is of opinion that the sling is an archaic American weapon, once in general use by Eskimos and Indians alike, and that it gradually gave way to the bow. The early explorers of the sixteenth century found the island inhabited by the Beothuks, or Red Indians, the first authentic, detailed account of whom we have through the Portuguese. In 1501 Gaspar Corte-Real discovered Newfoundland and brought home with him a number of natives, who are described in letters from Pietro Pasqualigo and Alberto Cantino, Italian ambassadors to the court of Portugal. These letters are quoted in full by Nansen,† but we shall here give merely a brief extract from them.

Pasqualigo says that the natives looked like gipsies, and were of the same appearance, build, and height. They painted their faces with figures. According to Cantino, the men were somewhat larger than Italians, were well built, and had long hair hanging in locks. Their eyes were greenish, which gave their face a savage expression. The women had small breasts, were well built, and attractive in countenance. Their complexion was rather fair, while that of the men was somewhat darker.

Pasqualigo states that they dressed in skins of different

* *Early Norse Visits to North America*, Smithsonian Miscellaneous Collection, vol. 59, No. 19, p. 157.

† *In Northern Mists*, New York, 1911.

animals, mostly otter. The skin was not prepared or sewn together, but just as it came from the animals. It was thrown over the shoulders and the arms, and around the waist it was tied with strings made of the sinews of fish. Their houses were built of large poles, covered on the outside with the skins of fish. According to Cantino, there were on the island very large deer (probably caribou), with long hair, the skin of which the natives used for clothing as well as for their houses and boats. There was no grain in the land, but people lived by fishing and hunting. They had no iron, but used instead implements of stone. Both writers state that the natives painted their faces and that their behaviour and manners were mild and friendly; they laughed a good deal and seemed easily pleased. This description corresponds fairly well with what we know of the Red Indians from later writers.

The following is abstracted from Sir Richard H. Bonnycastle's work on Newfoundland,* Cartwright's *Labrador Journal*,† and other sources.

At the time of the first settlement of Newfoundland, the Red Indians (so called because they painted themselves with red ochre) inhabited in particular the northeastern, northern, and northwestern part of the island. When first met by the Europeans they were universally described as gentle and harmless, the only complaint against them being that they were given to stealing iron, cordage, and other articles, which to them appeared of immeasurable value. In their habits, customs, and manners they resembled the Indians

* *Newfoundland in* 1842, London, 1842, vol. ii.

† C. W. Townsend, *Captain Cartwright and his Labrador Journal*, Boston, 1911.

of the continent.* Their tents or wigwams were conical, and consisted of a framework of poles covered with skin or birch bark. Inside the tent were small cavities dug in the earth and lined with moss or the soft branches of trees; these cavities were used as beds, and it is believed that the Indians slept in a sitting posture. Close to the wigwams were pits, about four feet deep, in which they stored their provisions for the winter. They used to dry or smoke the meat in special wooden buildings, and it appears that in some cases the provisions were stored in small log-houses. Cartwright states that besides the wigwams they also had houses built substantially of timber. These houses were ten or twelve feet square, and the roofs were low pyramids, with a hole in the top for the escape of smoke. The Indians provided for times of scarcity by jerking meat and fish, and by making sausages, which consisted of the flesh and fat of seals, eggs, and a variety of other rich matter, stuffed into sealgut.

Whitbourne states that the Red Indians constructed canoes of birch bark, which they paid with gum and turpentine. The canoes were worked by single-headed paddles. The Red Indians were excellent archers, and were skilful in dressing the skins of deer, beaver, otter, bear, and seal. Their burial-places were of different types. One found by Cormack in 1827 was shaped like a hut, four or five feet high, and floored with squared poles on which the dead bodies were laid at length, wrapped in skins. Another consisted of a sort of scaffold, some seven feet high. Of the language of the Red Indians but very little is known. They were gradually exterminated by the Europeans in the most

* Whitbourne, 1622.

wanton and merciless manner; the last of them were seen in the first part of the nineteenth century.

The Indians of Nova Scotia

The natives found in Nova Scotia by the explorers of the sixteenth and seventeenth centuries were of the Micmac tribe, called Souriquois by the French. A closely related tribe inhabited New Brunswick, and is mentioned by Cartier, who traded with them in Chaleur Bay in 1534. In exchange for skins Cartier gave them hatchets, knives, and other goods, which they accepted with joy. Cartier states that they appeared to be nomads, and that they came there during the fishing season to catch fish.

Not far from Chaleur Bay Cartier met another tribe of natives, whom he describes as follows in his *Relation Originale:*

"We saw a great number of savages who were engaged in fishing mackerel of which there is great abundance. . . . These people can truly be called savages, since no poorer people can be found in the world. . . . They are quite naked, except for a small skin round the hips, and some old skins which they throw over themselves scarfwise. They have neither the nature nor the language of the first natives whom we met (in Chaleur Bay). Their heads are shorn close all around, except for a tuft of hair on top of the head, which they let grow as long as the tail of a horse, and which they tie in a lump on their head with thongs of leather. They have no other dwellings than under their boats, which they turn over before lying down on the ground. . . . They never eat any food in which there is the least trace of salt. They are great thieves, and steal all they can get hold of."

Lescarbot * (about 1807) gives the following description of the Micmac Indians of Nova Scotia. The men are of good height. Their complexion is olive in color, or at least sunburnt like that of the Spaniards, not that they are born with that color, but being mostly naked and smeared with oil, they obtain a dirty and sunburnt appearance. In general they have black hair, and also their beard is black, but they rarely let it grow. Both men and women let the hair flow down over the shoulders, although sometimes the men tie it up in a bundle on the top of the head with a leather thong. They dress in skins, having one skin around their hips, and a kind of cloak, made up of several skins attached by a leather strap over the shoulders, usually leaving one arm outside. The women wear a belt around their skin-cloak. They wear also large stockings and moccasins; they use snow-shoes in winter when hunting.

Since each locality has its particular kind of fish at certain seasons, the Indians are forced to a nomadic life. They use canoes as a means of transportation, going on board with their families, dogs, and all their goods. The canoes carry no sail, and have very little stability, so that it is necessary to sit down low in them in order not to capsize. They are of about four feet beam with pointed ends, and high at the stem and stern, constructed of the bark of trees, with frames of cedar; the seams are tied together by roots and paid with resin of fir.

They use bows and arrows. The points of the arrows are of bone, sometimes fish-bone, and to the ends are attached eagle-feathers. They make pots of clay for cooking their food, and they cultivate the land; but they are not indus-

* *Histoire de la Nouvelle France*, Paris, 1866, Book VI.

trious except in hunting. The women perform the greater part of the field labor.

Comparison of the Skrælings with Eskimos and Indians

It is unnecessary here to repeat the references to the Skrælings found in the sagas. They were met only on Thorvald's and Karlsefni's voyages, described in Chapter V, which must be read carefully in order to comprehend the following discussion. Much confusion has existed as to the race of the Skrælings, but we shall here show that this confusion can be largely removed by an analytical comparison between these natives as described in the sagas and the Eskimos and Indians.

In the *Islendinga Book* it is stated that the implements found in Greenland by the first Norse settlers led them to believe that people of the same race as the Vinland natives had lived there. Now, there can be no doubt that the people who had left those implements in Greenland were Eskimos, and hence it may be inferred as probable that at least some of the natives of Vinland must have used similar implements, and must, therefore, have been Eskimos. Such was evidently the opinion of the Norsemen. On the other hand, there is reason to believe that, in some cases, the natives whom the Norsemen met in America were Indians.

We shall now discuss separately each of the different kinds or groups of natives that are mentioned in the saga accounts.

1. *The Markland Skrælings met by Karlsefni on his return from Straumfiord to Greenland.* These Skrælings we believe to have been Eskimos, first, because the four words of their language given in the saga (*ER*) are, according to

Thalbitzer, undoubtedly corrupted Eskimo words or sentences; second, because the boys caught by Karlsefni stated that their people lived in caves or holes. (Compare the winter dwellings of the Eskimos described earlier in this chapter.)

2. *The uniped.* The so-called uniped seen by Karlsefni (*ER*) was probably an Indian. He is not referred to in the saga as a Skræling. He came out of the woods, aggressively fired an arrow at the Norsemen, and ran away swiftly.

3. *The Skrælings met by Thorvald* (*GÞ*). Thorvald met the natives in the summer, and we hear nothing about them at all during the two winters that Thorvald spent in Vinland. Now, as explained above, during the summer the Eskimos go hunting inland, but during the cold season, including spring and fall, they live chiefly by hunting the seal on the floe-ice on the coast. If, therefore, the Skrælings were Eskimos, we should expect the Norsemen to have seen them in the winter, rather than in the summer, and we should expect to have heard about their dogs and dog-sleds. The Indians, on the other hand, are most likely to appear at the coast in the summer, because then they go fishing; in the winter they hunt inland, where, in fact, they spend the greater part of the year.

There is thus good reason for believing that Thorvald's Skrælings were Indians, and several other statements in the saga support that view, or at least do not conflict with it. The wooden shed which the Norsemen thought to be for the storage of grain suggests the dwellings, storehouses, or burial-places of the Indians. The hillocks seen by Thorvald at the bottom of a fiord, and supposed by him to be dwellings, may as well have been Indian wigwams as Eskimo

houses. The fact that Skrælings were found sleeping under their boats on the beach fits the Indians as well as the Eskimos. Cartier found Indians sleeping under their boats in New Brunswick, but the Greenland Eskimos use their koneboats for the same purpose.

The only statement in the saga which strongly and positively indicates that the Skrælings seen by Thorvald were Eskimos is that they used skin-boats. While the Eskimos, with the exception of the inland Eskimos of Alaska, always use skin-boats, there are very few reports of Indians having used anything but boats of bark or wood. In fact, where these latter materials were plentiful, there could be little inducement to use skin instead.

Storm considers the statements in the sagas about skin-boats to be due to a simple mistake as to their construction, but the Norsemen had a good opportunity to examine them on several occasions and would not be likely to make mistakes of that nature. It seems more probable that the statements about skin-boats crept into the sagas much later, when the saga-writers knew that the Skrælings in Greenland used boats of this material. The saga-writers may then have taken for granted that all Skrælings used skin-boats, also those in Vinland, and may have inserted comments to that effect in the sagas, in order to make them more remarkable and interesting. On the whole, we seem to be justified in assuming that Thorvald's Skrælings were Indians, an assumption which, as we shall see, is strongly supported by the geographical analysis.

4. *The Skrælings met by Karslefni* (*GÞ and ER*). According to *GÞ*, the natives made their appearance first in the early part of summer, later in the early part of winter.

According to *ER*, the Skrælings appeared first in the early part of summer, soon after the arrival of the Norsemen at Hóp, and next year they arrived in the early spring. The Skrælings traded with the Norsemen, bartering away their skins as do Indians and Eskimos alike, but, except for the statement in *GÞ* that the Skrælings appeared the second time early in winter, there is preponderating evidence that they arrived in the early summer or in the spring, which would seem to show that they were Indians. The description given in *ER* of the Skrælings whom Karlsefni met at Hóp fits the Indians at least as well as the Eskimos. The Skrælings are described as of a swarthy complexion and with ugly, scraggly hair. They had large eyes and broad cheeks. Neither Indians nor Eskimos have large eyes, but the other characteristics may fit either of the two races. The fighting spirit of the Skrælings, their use of slings, their desire to obtain weapons and their attempt to steal them (*GÞ*), and their war-whoops are all traits common to Indians and Eskimos, as shown above.

The ball or balls that the Skrælings used as a weapon in the fight at Hóp (*ER*) is identified by Mr. H. R. Schoolcraft* with a giant club said to have been used in former days by the Ojibwa Indians. This club was formed by a large stone wrapped in a deer's hide and suspended from the end of a pole, an explanation which seems much more plausible than the opinion, advanced by some, that this ball was the inflated bladder used by the Eskimo in hunting large sea animals. Such a bladder could neither come down with a big crash, as did the ball of the Skrælings, nor could it possibly do any harm.

* *American Indians*, I, 73.

In *ER* it is stated that the Skrælings were swinging staves in their boats in a direction sometimes with and sometimes against the sun, and that the Norsemen believed this to be a token of peace or war. It has been suggested that this statement refers to the double-bladed paddles of the Eskimos, and if so, the staves would apparently be swung with the sun when the boats were observed sailing from left to right, and conversely. It is clear, however, that if the staves were really oars, the Norsemen would be aware of this fact, and would not mistake the purpose of their being swung. It seems more likely that the staves were darts, which were swung by the natives in their excitement or according to some custom of theirs. In such a case the natives might as well be Indians as Eskimos. Again, the only statement which points to the Skrælings being Eskimos in this case is that they used skin-boats (*ER*). We have already discussed the weight of this statement, but in the present case it may be added that according to *GÞ* the Skrælings came out of the woods, and boats are not mentioned at all.

Taking all the evidence into account, we conclude that the Skrælings at Hóp were Indians. This is again supported by the geographical analysis, according to which they were the Red Indians of Newfoundland, and is corroborated by the account of the Skrælings whom Karlsefni found on the same coast north of Hóp. These natives were clad in coats of skin, and had with them boxes containing what the Norsemen described as "animal marrow mixed with blood." This corresponds well with the sausages which the Red Indians used to prepare.

Coast of Baffin Land on Hudson Strait. Showing great range of tide

Photograph by courtesy of J. T. Rowland. Reproduced by permission of "Outing"

Fiord Scenery in Northern Labrador

The Holloway Studio

CHAPTER X

DESCRIPTION OF THE COASTS OF AMERICA PROBABLY DISCOVERED BY THE NORSEMEN

BEFORE proceeding to the geographical analysis of the sagas, we shall describe the main features of the coasts most likely to have been sighted and explored by the Norsemen. In this connection Baffin Land, Labrador, and Newfoundland are undoubtedly the most important, since these countries are nearest to Greenland, but, as will be shown in the next chapter, also the coasts of Nova Scotia and of the continent farther south are of interest. The description comprises in general all features that are of interest to the navigator and explorer, but particular attention is paid to such points as are referred to in the sagas. It is based essentially on modern publications, such as *Sailing Directions*,* handbooks, and other descriptive works, but since considerable changes have taken place during the last nine hundred years in animal and plant life, and perhaps also in the distribution of the native tribes, numerous abstracts are given from the accounts of early explorers. It may be proper to add here that no marked change appears to have taken place in climatic conditions of these regions since the visit of the Norsemen.

Baffin Land

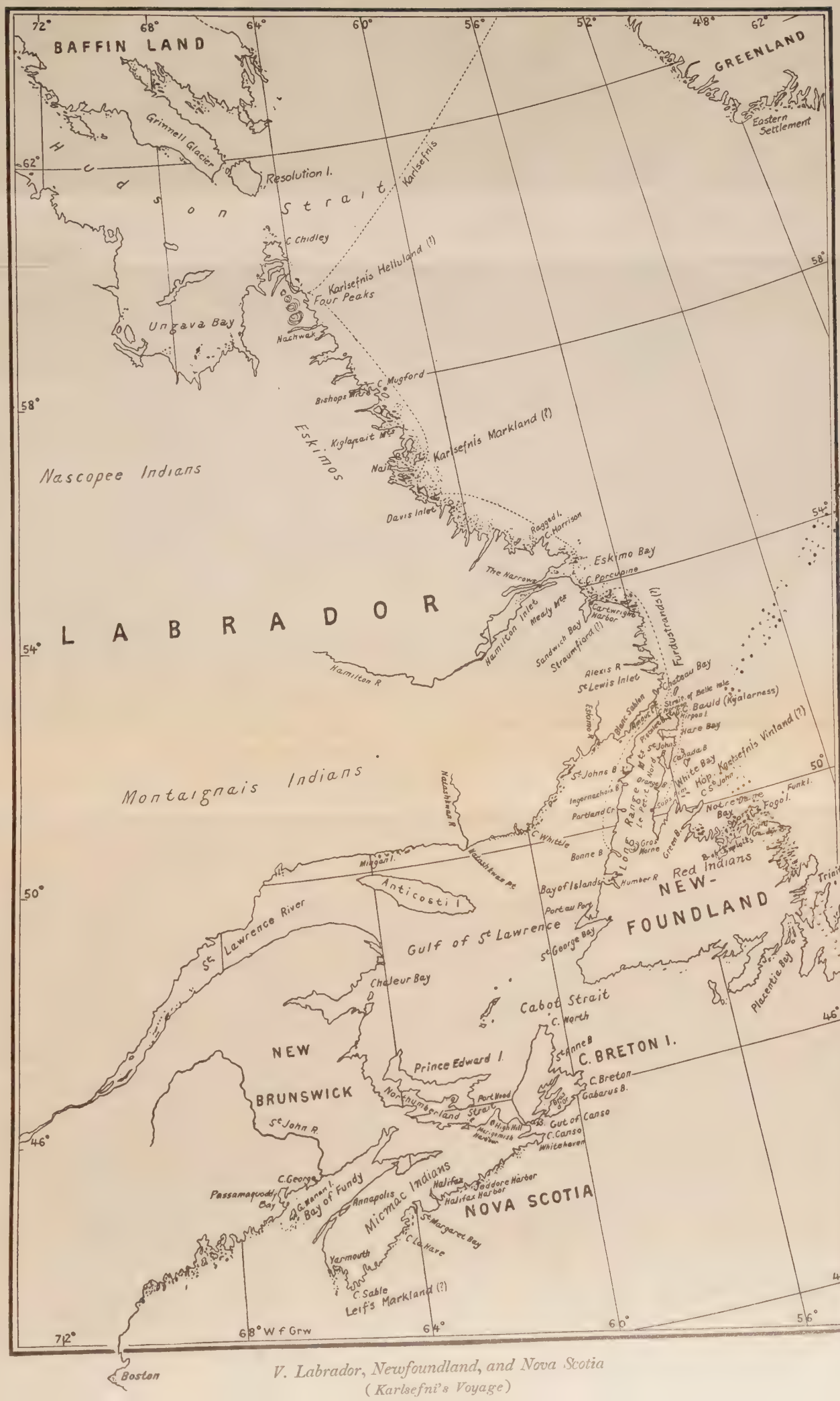
Baffin Land is a large island lying to the west of Greenland, from which it is separated by Baffin Bay and Davis Strait. To the west it is separated from the Melville Peninsula by

* Published by the United States Hydrographic Office and by the British Admiralty.

Fox Channel, and to the south by Hudson Strait from Labrador. Thus, as pointed out by Dr. Boas, Baffin Land may be said to form geographically and ethnographically the connecting link between three regions, Greenland, the Hudson Bay Territory, and Labrador, all inhabited by Eskimos. Baffin Land stretches from Hudson Strait northward through twelve degrees of latitude, between the parallels of 62° and 74° N. Frobisher supposed it to consist of a number of separate islands. Its appearance is generally bleak, barren, and mountainous; bare, black-looking rocks are almost everywhere in evidence. In the report of Frobisher's voyages (1576–78) it is stated that in Frobisher Bay the mountains are covered with snow, in most parts, even all the summer long, the northern shores having less snow and more grass (moss) than the southern.

The mountains form three principal ranges, all trending southeast and resulting in three large peninsulas, stretching out towards and facing Davis Strait, and enclosing two deep bays, Cumberland Sound and Frobisher Bay. Northward of Cumberland Sound the broad northeastern range forms a vast highland from five thousand to perhaps eight thousand feet in height, covered with a cap of ice similar to that of Greenland, and sending forth glaciers in all directions. The middle range, between Cumberland Sound to the north and Frobisher Bay to the south, forms a comparatively level plateau of smaller height; only a single mountain reaches the region of perpetual snow.

The summit of the southern range, lying between Hudson Strait and Frobisher Bay, is covered by an extensive, smooth-topped cap of ice, the so-called Grinnell glacier, about one hundred miles long and about twenty miles broad.



V. Labrador, Newfoundland, and Nova Scotia
(Karlsefni's Voyage)

This peninsula Frobisher called Meta Incognita. Frobisher Bay, which Frobisher considered a strait, penetrates about one hundred and fifty miles from the entrance.

On Resolution Island, which lies south of the entrance to this bay, a glacier-like formation exists on a small scale.

That the country is strewn with boulders may be gathered from several remarks in Frobisher's narrative. Thus it is stated that the most abundant substance of the mountains is "stones, and those stones are so shaken with extraordinary means, that one is separated from another, which is discordant with all other quarries."

Here, as on the coast of Labrador, refraction is very pronounced, and mirage is common and characteristic of the few fine days of summer. Often land is seen from far greater distances than in the ordinary state of the atmosphere.

It is important to note that the range of spring tide on the coast facing the Hudson Strait is about forty feet.

The fauna of Baffin Land appears to have been very rich formerly. Thus on Frobisher's voyages there were seen a great many deer (caribou), hares, wolves, white bears, and various sea fowl.

Atlantic Coast of Labrador*

The peninsula of Labrador extends between the parallels of 50° and 62°. It forms an elevated plateau, bordered on the Atlantic coast by a mountain range, which rises somewhat abruptly from the sea to heights of from five hundred to two thousand feet within a few miles of the coast, present-

* The main sources of information in this chapter are: *Newfoundland and the Labrador Coast*, Hydrographic Office, 1909; C. W. Townsend, *Captain Cartwright and his Labrador Journal*, 1911; W. T. Grenfell, *Labrador*, 1909.

ing a barren and iron-bound aspect. In the southern half the mountains are low and rarely exceed fifteen hundred feet in height, but in the northern half they rise to an average height of some two thousand feet, attaining their greatest elevation midway between Nachwak and Cape Chidley, where the so-called Four Peaks attain a height estimated at from five thousand to six thousand feet. Immense fields of snow cover the sides of these mountains even in the summer.

The coast is indented with deep irregular bays and fringed with innumerable rocky islets, while long and narrow fiords penetrate inland, affording an abundance of excellent harbors. The hills fall steeply to the sea, often in precipitous cliffs, and terminate in rugged, rocky points. The only beach of any extent is found at Cape Porcupine, just south of Hamilton Inlet, in lat. 54°. Here large deposits of sand form a coastal plain many square miles in area, bordered by a white sandy beach on both sides of the cape. This fact is of importance in view of the repeated references in the sagas to extensive sandy beaches. Smaller beaches and sand deposits are found all along the coast, but only in sheltered places, especially at the bottom of bays and fiords at the mouth of rivers.

A characteristic feature of Labrador, and, as mentioned above, also of Baffin Land, is the deposit of drifted boulders with which the surface of the country is thickly strewn, left on the bed rock by the ice of the glacial period. The presence of these boulders is especially marked on the higher levels; in fact, near the coast below the two-hundred-and-fifty-foot level, they have been largely washed away, or ground down by the sea during the process of uplift of the land,

Coast near Cape Mugford, Labrador. Lat. 58°

Photograph by J. T. Rowland

Photograph by courtesy of J. T. Rowland *Reproduced by permission of "Outing"*

Bishop's Mitre, just South of Cape Mugford, 3000 feet high

Here is the northern limit of trees on the Labrador coast

which took place in post-glacial times. Many boulders are left stranded in the valleys of the emerging land on the so-called raised boulder beaches. These boulders remind us of the *hellur* of the sagas, that is, the rocks, or large (flat) stones, which suggested to the Norsemen the name "Helluland."

The climate is extremely severe, ranging from cold temperate in the southern part to arctic on the Hudson Strait. On the treeless portions of the coast and on the outer islands the flora and fauna present an almost purely circumpolar character, and the air is raw and cold, especially when the wind comes from the sea. In the summer on the coast the sea is often at freezing point, and the air is not much warmer even in the warmest summer months on the southern part of the coast. In the interior, and even at the bottom of the fiords, a marked difference is noticeable, for in summer the air is remarkably soft and warm there, in fact uncomfortably so at times. This difference between the coast climate and the climate a short distance inland is characteristic of Labrador, and is due to the cooling effect of the Labrador Current, which, not only during the winter, but also through the spring and early summer months, carries on its surface a mass of floating ice of about one hundred thousand square miles in area. On the other hand, at the heads of inlets, where this cooling action is not so strongly felt, the heat of the sun asserts itself, the latitude being relatively low.

The Labrador Current sets southward through Davis Strait and follows along the east coasts of Labrador and Newfoundland. As explained in Chapter II, it carries with it the screwed and broken sea-ice, in Davis Strait called the West Pack, accompanied by icebergs. The first ice borne

southward by this current is the so-called "northern slob," formed in the Arctic and east of Labrador during the fall and the early winter months. It blocks the harbors along the coast of Labrador, commencing at the northern part in October. It consists of surface ice crushed up by the wind and sea, and varies in thickness from three to ten feet. The northern slob is observed moving southward as a narrow stream off the coast of Labrador, in lat. 55°, about the middle of December. It gradually broadens to a width of some twelve to fifteen miles in January, when the sheet ice begins to take the place of the slob. The sheet ice is more dense and solid than the slob. Icebergs floating in the sea ice may be encountered at any time, but are most numerous from June till August. During the late summer months, and sometimes as early as June, the Labrador coast is free from ice and open to navigation, but the ice conditions depend largely on the direction of the wind. The mail steamer makes its last visit in November. The larger bays freeze solid in the beginning of December, and the coast generally remains ice-bound till late in June. Every sheltered harbor in Labrador is frozen over in the winter. Fogs occur throughout the year, but are on the whole rare; they prevail with easterly winds, and are most frequent during June and July. The range of spring tides is from four to seven feet on the east coast, but at Cape Chidley and elsewhere in the Hudson Strait the range is from thirty-five to forty feet. The tidal streams at Cape Chidley are extremely strong.

It follows from the peculiar climatic conditions that the coast is bleak, but the shores of bays and rivers, except of the most northern portion, are well wooded and in some cases densely so, the timber being tall and sound. The trees are

Davis Inlet. Lat. 56°

Photograph by courtesy of J. T. Rowland. Reproduced by permission of "Outing"

Cape Harrigan off Davis Inlet

By courtesy of W. B. Cabot

spruce, larch, fir, birch, and aspen. In many parts, however, the forests have been largely destroyed by fires and by reckless cutting. The southern portion of Labrador up to lat. 53° was formerly covered with trees, except on rocky summits and on the outer islands. At present enormous fire-swept tracts are found in the forests. In lat. 55° more than half the country is treeless, due to the severity of the climate, and the northern limit of trees near the coast is in about lat. 58°. North of this latitude only dwarf willows and birches grow, while mosses and lichens form the principal covering of the ground.

On the coast the country is not fit for agriculture, vegetables are raised with difficulty and rarely reach maturity; but at the heads of deep inlets vegetables, flowers, and even cereals are grown. There is an abundance of wild cranberries and currants.

White bears were probably very numerous all along this coast at the time of the Norsemen's voyages. On Cabot's and Cartier's voyages white bears were seen even in eastern Newfoundland. In Cartwright's time (1770) they were still numerous even on the southern part of the Labrador coast, but at present they are chiefly found only on the northern part. Black bears are abundant in southern Labrador. Caribou, usually referred to as "deer," is the most important mammal. Foxes of various kinds, including white or Arctic foxes, beavers, otters, hares, and porcupines were common in Labrador in former times, but are now relatively scarce. Multitudes of eider ducks and other fowl breed on the outer islands. The fisheries are very important, especially those of seal and cod. Trout and cod are abundant from July to October; the herring fishery begins in Sep-

tember. In the winter there is fishing of rock cod in the bays and of trout in the lakes. Salmon were formerly abundant. According to Dr. W. T. Grenfell,* navigation along this coast during summer is far from difficult or dangerous, as one might expect from the presence of ice and from the rocky nature of the coast. There are so many harbors that it is not necessary to spend a single night at sea the whole way from the Strait of Belle Isle to Cape Chidley. Everywhere, too, the coast is bold. The days are long in summer, and at night the clear atmosphere, the splendid northern lights, and the absence of strong tidal currents (except in the extreme north) make navigation still easier. Grenfell has cruised the coast, both in sailing-boat and steamer, year after year, and has never yet come near losing a life. The fishermen who visit this coast can give similar evidence. Thousands of men, women, and children have for many years been cruising the outside coast in summer; they come down from Newfoundland in sailing-craft of every conceivable kind, many in sailing-vessels under twenty tons, and some in open skiffs; yet it is very rare to hear of any having been lost from stress of weather. The months of navigation are from July to October; in June the arctic ice still besets the coast, and in November the last of the fishing-vessels go south.

The statements by Dr. Grenfell which have here been given in abstract are of importance, because they show clearly what conditions the Norsemen would meet on this coast, which appears to be far less dangerous to navigate than that of Greenland. We may add that in the summer of 1911 Mr. J. T. Rowland sailed all along the Labrador east

* W. T. Grenfell and others, *Labrador*, 1909, pp. 41, 42.

Ragged Islands. Lat. 55°, near Cape Harrison

By courtesy of W. B. Cabot

Cape Harrison

By courtesy of Hon. Wm. Cary Sanger

coast to Baffin Land and into the Hudson Strait in a frail thirty-five-foot motor boat.*

The most important fiord on the Labrador coast is Hamilton Inlet, which is about one hundred and twenty miles deep. About thirty-five miles from its entrance, at which numerous islands are found, the inlet is contracted to the so-called Narrows, which at one point is only some seven hundred yards wide, and through which the tidal streams may attain a speed of from six to seven knots an hour. Inside the Narrows the fiord broadens out to a width of eighteen miles, and at its head flows the Hamilton River, the largest river on the Labrador coast. The inlet and the river valley form in the east a natural boundary between southern Labrador and northern Labrador, the so-called Ungava District.

The sandy Porcupine Strand, which extends for from forty to fifty miles between Hamilton Inlet and Sandwich Bay, has already been mentioned. It owes its sandy nature to its sheltered position behind headlands and outlying islands. On the sandy plain inside this beach is an extensive growth of scrub timber.

Sandwich Bay, just south of Cape Porcupine, extends southwestward to two narrow channels ten miles from its entrance. Thence it expands to a spacious basin, which extends fifteen miles farther southward. Its shores are sandy, especially at the mouth of rivers, of which several empty into the bay. Numerous islands obstruct the entrance, and strong tides run in the channels. The rivers are famous for salmon.

* J. T. Rowland, *To Baffin Land in a Motor Boat*, *Outing*, January, February, March, 1912.

Cartwright Harbor, where the Hudson Bay Company has an establishment, lies on the channel between Earl Island and the mainland.

At the head of Sandwich Bay is Hinchinbrook Bay, which is entered through a narrow channel. Paradise River, which flows into this bay, may be ascended by a steam launch nearly to the lake at its head, a distance of some five miles. This lake abounds in salmon, trout, and pike.

Mealy Mountains, a range attaining the height of 1482 feet, extend from Sandwich Bay to Hamilton Inlet. They are never free from snow and are visible from the outer islands.

St. Lewis Inlet, immediately north of the Strait of Belle Isle, is in many respects typical of this part of the coast. It is one mile wide at the entrance, but becomes wider within. Several islands lie at the entrance. Nine miles from the entrance there is good anchorage at Black Fly Island. Above this point navigation is intricate, but small vessels may ascend some five miles farther, where a sand flat and boulders, nearly dry at low water, extend across the head of the inlet and the mouth of St. Lewis River. The trees increase in number and size from the entrance to the head of the inlet, owing to the change of climate. Black Fly Island and the shores on either side are thickly wooded with spruce and birch, supplying timber suitable for building schooners and boats and for fishing-stages. The scenery is beautiful, the granite hills rising occasionally, on either side of the inlet, from seven to eight hundred feet above the sea.

In the annual reports of the Moravian Brethren from the early part of last century, Mr. W. G. Gosling* has found

* *Labrador*, New York, 1911, pp. 11-18.

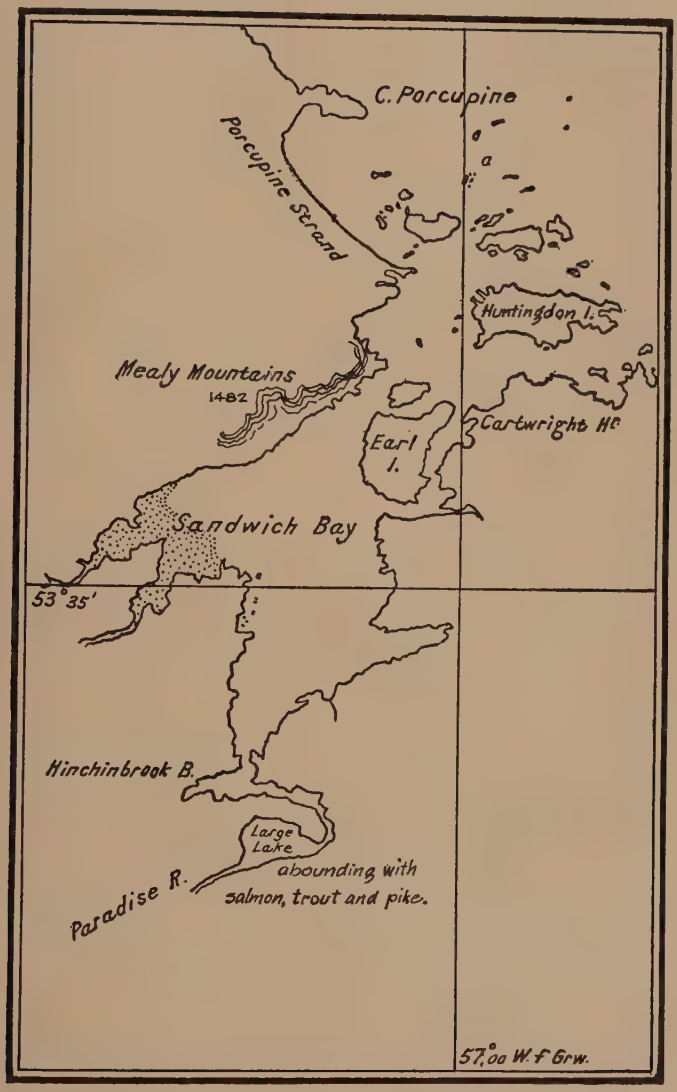
Near Assiwaban River. A short distance inland. Lat. 56°. Moreland (?)

By courtesy of W. B. Cabot

Near Hamilton Inlet. Lat. 54½°

By courtesy of the Hon. Wm. Cary Sanger

references to houses discovered on the islands bordering the east coast, especially at Nain, in lat. 55° to 56°, and on



III. Sandwich Bay on the Labrador Coast, just South of Hamilton Inlet. Straumfiord (?)

Amitok Island, in lat. 59°30′. These houses were built of stones, which mode of construction is not used by the Labrador Eskimos. Some of the ruins are said "to consist of remains of walls, and graves, with a low stone enclosure round the tomb, covered with a slab of the same material." Bishop Martin, the present head of the Moravian missions in Labrador, states that he has heard about these ruins several times, but that he has never yet seen one of them. He once showed some pictures of the old Norse Greenland houses to the Eskimos, and they at once told him that some ruins on the islands were very much like those given in the pictures. It is worth noting that the present Eskimos on Labrador show no respect for the dead and would not construct such burial-places; they also disclaim all responsibility for the houses.

Some curious erections of obvious antiquity, built of flat slabs of stone on the summit of lofty cliffs, have recently been discovered by Dr. Grenfell, who thought them look-out places. We have already mentioned that similar structures are found on the mountains in Greenland overlooking the sea.

An explanation of at least some of the above mentioned structures may possibly be found in the report of William Baffin, of the English expedition to Greenland in 1612. Baffin says that the Greenland Eskimos bury their dead on the outlying islands. Upon the tops of the hills they gather a number of stones together and make thereof a hollow cave of the length and breadth of the dead body. The grave is covered with broad stones. Near by another grave is made, where the weapons and other implements of the deceased are deposited.

Labrador Coast, not far North of the Strait of Belle Isle

By courtesy of Hon. Wm. Cary Sanger

Strait of Belle Isle

By courtesy of W. B. Cabot

The Labrador Coast of the Strait of Belle Isle

The Strait of Belle Isle is about seventy-three miles long, and from thirteen to fourteen miles wide on each side of Belle Isle, but the narrowest part of the strait is at Amour Point, where it is only about nine miles wide. The Labrador coast is steep, rising to flat-topped ridges and summits from one thousand to thirteen hundred feet high. Several of the bays and inlets are large, with bold shores and very deep water.

Dense fogs prevail in the strait during summer, and sometimes last for several days at a time. In September strong northerly or northwesterly winds with clear weather are more likely to occur.

The ordinary rates of the streams are from one to two knots an hour, but in certain localities, as off Amour and Forteau Points, the streams are stronger and may attain a rate of from four to five knots close to the shore. Ice appears about the middle of December. At the beginning of the year heavier ice drifts into the strait from the north along the Labrador coast. Icebergs are most numerous from April to September. Even after May heavy arctic ice may drift into the strait. The strait is open to navigation from about the middle of June to the end of November.

The coast is barren and there is hardly any grass on this part of the country, but the moss eaten by the caribou is plentiful, and likewise the cranberry, called here the "partridge berry," the curlew-berry (*empetrum nigrum*), and similar shrubby plants, which form a dense uniform carpet of varied but dull green hues. Several of the bays on this coast, such as Anse à Loup, Forteau Bay, and Blanc Sablon have

sandy beaches at the outlet of rivers or brooks, emptying into them. The streams here, as elsewhere in Labrador, consist largely of chains of ponds or lakes connected by rapids or waterfalls. Often the mouths of the streams are shallow and only boats and vessels of small draught can enter.

Jacques Cartier, who visited this coast in 1534, gives the following description of it:* "If the land was as good as the harbors it would be very well; but it ought not to be called the New Land, but rather (the land of) frightful and rough stones and rocks, for on the whole of that northern coast I have not seen one cartload of earth, although I have landed in several places. Except at Blanc Sablon, there is nothing but moss and small stunted woods. In fact, I rather think that this is the land which God gave to Cain."

South Coast of Labrador

Sailing from the Strait of Belle Isle westward to Cape Whittle, some hundred and thirty-six miles, we find a coast broken into bays and inlets, and fringed with numerous islands, rocks, and ledges. The mainland as well as the islands is here lower than in the strait. With its severe and gloomy climate this is one of the most barren and desolate coasts in the world. As viewed from the sea, it presents a wild and dreary aspect.

The ice does not usually leave the coast before June, and begins to form again in sheltered places in September. Even at midsummer snow may continue to occupy the ravines and other shaded places. In the sheltered bays, however, the temperature is much higher, and at some fifteen miles

* H. Michelant and A. Ramée, *Relation Originale du Voyage de Jacques Cartier au Canada en* 1534, Paris, 1867, p. 11.

Scenery on the Northeast Coast of Newfoundland

The Holloway Studio

inland the country is thickly wooded in the valleys. There are many animals which are hunted for their skins by the inhabitants. Seals, salmon, and codfish are plentiful.

Eskimo Bay with Eskimo River resembles in general character the bays in the strait already described. Boats have ascended the river for five miles, and passed through two lakes, separated by shallow and narrow channels. The river abounds in salmon.

Going westward from Cape Whittle to Natashkwan River, about sixty-two miles, the coast rises into low but steep hills and ridges with rounded summits, having morasses and stagnant pools between them. The coast presents the same features as east of Cape Whittle; only the last thirteen miles before Natashkwan Point the coast is sand. At the mouth of Natashkwan River are sandy points, and a low sandy island with narrow shallow channels on either side. Codfish are plentiful in June, and the river abounds in salmon. The coast west of Natashkwan River is characterized by long reaches of sandy shores, a coastal plain, and a low barrier mountain range. Numerous large rivers pour out at frequent intervals.

Newfoundland

We shall here describe in particular the northeast coast, which faces the Atlantic, and the west coast, which faces the Gulf of St. Lawrence. The northeast coast extends from Cape Bauld, in lat. 57°40′, to Cape Race, in lat. 46°35′; it is indented with deep bays, which contain numerous smaller bays, harbors, and coves, and are studded with islands. In all the bays there is deep water to the very shores; they nearly all afford shelter to vessels during summer, and many

provide fine harbors. The general character of the coast is wild and rugged, and from the sea it presents a forbidding aspect. The shores are steep, rocky, and generally barren or covered only with small trees, but, as in Labrador, the character of the land improves at the head of the deep bays and up along the river valleys.

The island is generally hilly, but the hills rarely exceed an altitude of one thousand feet; the ranges trend northeast and southwest. Scattered boulders form a characteristic feature of the hills and headlands. A gradual uprising of the whole island is very noticeable, even from generation to generation. Thus, in many places the fishermen cannot now moor their boats in the same water where their fathers could.

The climate of the northeast coast is governed largely by the Labrador Current, but is tempered by the Gulf Stream, which makes the climate more even than on the adjacent continent. In winter the temperature seldom falls below zero, and in summer it rarely rises above 80° F. The arrival of spring is uncertain and tardy, and its duration is very short; summer sets in suddenly and vegetation advances rapidly. Summer and autumn are always fine, while winter, which sets in about the beginning of December, lasts until the middle of April, with snow lying almost continuously during that period. The climate, however, shows great variations from year to year. Westerly winds prevail throughout the year. Easterly winds generally bring fog, which is most common during June and July.

From December, and usually until May, the harbors on the northeast coast are blocked by field-ice and icebergs. In February the breadth of the slob off Cape Spear reaches from eighty to one hundred and thirty miles, on the average. East-

Scenery on the East Side of White Bay, Newfoundland, August, 1912

By courtesy of W. B. Cabot

Coast Scenery at Trinity Bay, Newfoundland

The Holloway Studio

erly winds will drive the ice against the coast and fill all the bays so that no water can be seen. Between the end of March and the middle of April, during ordinary years, the ice swings off to the eastward. After the month of May heavy arctic ice, accompanied by icebergs, drifts along the coast, and forms a constant obstruction, generally until July, from Indian Tickle on the coast of Labrador to the Fogo Islands on the east coast of Newfoundland. In the ocean east and southeast of Newfoundland icebergs and extensive fields of solid compact ice are liable to be met with, especially from April to August. The tidal ranges on the coast of Newfoundland are moderate: only from four to seven feet.

The west coast extends from Cape Bauld to Cape Ray, in lat. 47°35′; together with the northeast coast, as far as Cape St. John, it forms what is generally referred to as the "French Shore." The west coast, particularly its northern part, is less indented than the east coast. A few miles inland, the Long Range Mountains, running all along the coast as far north as St. John's Bay, rise at many points to more than two thousand feet and give a stern and imposing aspect to the coast. In fact, the highest mountains in Newfoundland are found in this part of the island. The climate is much milder than on the northeast coast, and the general appearance of the coast is more inviting. Ice forms in the gulf early in December, and usually the west coast of Newfoundland is clear of ice at the middle of May, but here, as on the east coast, great differences in ice conditions may exist in different years.

Passing along the south coast of Newfoundland, we come to the southeastern point of the Avalon Peninsula, Cape Race, which, at least before the days of steam navigation,

was the most important headland on the east coast of North America, and to this point several great sailing routes converged. Its distance from Cape Clear in Ireland is only about seventeen hundred miles.

On the northeast coast trees are generally of a stunted growth, and it is only at the heads of bays and in sheltered places that they attain sufficient size to make spars even for small vessels, while a mast for a large schooner can be obtained only at a long distance from the sea. The timber is, however, hard and durable. In former days the most extensive forests abounded in the northern parts of the island, but fires have reduced their extent and have destroyed the largest trees, which have been succeeded by trees of a different and smaller species. On the west coast, on the other hand, excellent timber of larger dimensions is still obtainable. Fir, spruce, pine, and birch are most abundant, but there are also many other kinds of trees. Flowering plants and ferns grow in great variety, and wild grasses and clover are abundant. There is good fodder for the cattle. The berry-bearing trailing plants and shrubs form one of the features of this island, as in Labrador; they clothe every swamp and every open rocky tract, the so-called barrens. Among the berries should be mentioned black crowberries (*empetrum nigrum*), cranberries, whortleberries, cowberries, and partridge berries.

A great many fur-bearing animals are indigenous in Newfoundland, such as the black bear, deer, fox, Arctic hare, beaver, and seal. Whether white bears (*i.e.*, polar bears) inhabited Newfoundland at the time of the Norsemen's voyages is uncertain, although the accounts of Cabot (1497) and of Cartier (1534) seem to show that these later

Humber River, West Coast of Newfoundland

By courtesy of Dr. Charles W. Townsend

Humber River, West Coast of Newfoundland

By courtesy of Dr. Charles W. Townsend

explorers saw polar bears on the island. Speaking of one of the Funk Islands, Cartier says: "Although this island is fourteen miles from the mainland, the bears swim out there in order to eat the birds, and we saw one bear there, as big as a cow, and white as a swan . . . its flesh was as good to eat as that of a young steer." It is, however, possible that these bears may have come down accidentally with the arctic ice. Walrus once abounded in the Strait of Belle Isle and other parts of the coast, but as early as 1583, when Captain Hayes visited the island,* they had been practically exterminated in those regions. The seal fishery is very important, and is carried on in March and April, when the seal come down on the arctic ice. Captain Hayes found abundance of trout, salmon, cod, herring, turbot, and whales. Salmon have now been almost exterminated. Codfish appear off the coast in April, and the fishing season lasts until October, when these fish take their departure, but they reappear with the greatest regularity every April. On the west coast spring herring appear in May and autumn herring in October.

A great variety of birds occur on the island. We may here mention the eider duck and the baccalao bird, which are found in myriads on many of the outlying islands. Thus on Funk Islands (Cartier's Isles des Oyseaux) are numberless birds and eggs, and the islands are covered many feet deep with sea-birds' dung. The great auk, now extinct, was seen here by Cartier in great multitudes, and must have been very numerous at the time of the Norsemen's voyages.

When the island was explored in the sixteenth century it was inhabited by the Beothuks, or Red Indians.

* Bonnycastle, *Newfoundland in* 1842.

We shall here describe in particular the northwestern peninsula, Le Petit Nord, which is of special interest in connection with the voyages of the Norsemen. The northernmost point, Cape Bauld, is situated on the small Kirpon Island, separated from the peninsula by a narrow channel; it is bold and barren, and the tidal streams around it are strong

IV. Sop's Arm on White Bay, Newfoundland. Karlsefni's Hóp (?)

and eddying. The total length of the peninsula to the bottom of White Bay is about one hundred and forty miles, and it averages from thirty to thirty-five miles in width. At its southern base are some of the highest mountains on the island.

Going southward from Cape Bauld along the east coast of the peninsula, we first find the large Hare Bay, further

Robinson's Head, St. George Bay, West Coast of Newfoundland

By courtesy of George D. Bussey

Mouth of Middle Barachois Brook, St. George Bay

By courtesy of George D. Bussey

south Canada Bay, Orange Bay, and finally Sop's Arm; but numerous smaller inlets and bays indent the coast. The coast is generally steep and cliffy; the shores of White Bay as well as the heads of the various inlets are thickly wooded. Canada Bay is entered through a passage called the Narrows, beyond which it widens into a capacious basin. Sop's Arm is an inlet near the head of White Bay. It is some five miles deep, and at its mouth lie Sop's Island and George Island, leaving narrow channels of entrance to a rather wide expanse of water inside. The shores are densely wooded. A large stream, Main Brook, flows into the inlet at its northwestern corner, where a delta-like flat is formed with numerous marshy islets. The outer islets are fronted by gravel flats and large boulders.

Going westward from Cape Bauld round the northern end of the peninsula and then south down along the west coast, we find first the large indentation, Pistolet Bay, open to the north. Then follows a stretch of low, straight, monotonous coast, extending from Cape Norman some thirty-seven miles in a southwesterly direction, backed by a wooded ridge about one hundred feet high. Farther south are a great number of smaller inlets, among which Ingornachoix Bay and Bonne Bay are the most important. Finally, we come to the larger bays, Bay of Islands, Port au Port, and St. George Bay. Speaking broadly, the coast may be described as cliffy, broken here and there by gullies, and densely wooded at the top. Behind the cliffs are seen the wooded hills of Long Range Mountains. It seems likely that the whole west coast south of the strait was densely wooded in former times. Generally the coast is fronted by rough, stony beaches, but at inlets, where rivers flow out, we often find sandbanks, flats,

and beaches. A characteristic feature of this coast is the large ponds or inlets of extensive area, which, through a short river channel or a narrow entrance, connect with the sea. Portland Creek, Parson's Pond, and St. Paul's Inlet belong in this category.

The scenery in the bays is often grand and picturesque, and the coast south of the Strait of Belle Isle includes the richest valleys and the best soil of Newfoundland. The coast is nearly free from fogs, and its climate is mild. It borders on the most prolific fishing-grounds, and is called the Garden of Newfoundland.

Bonne Bay is from ten to twelve miles deep, and is divided into two arms, East Arm and South Arm. The head of East Arm is about thirty-five miles from Sop's Arm on the other side of the peninsula, and the high mountain range which is found between them is visible from both sides. The summit of the range, Gros Morne, 2540 feet high, is distinguishable from seaward.

The whole west coast up to Ingornachoix Bay is capable of supplying good timber for shipbuilding; the timber is here larger and more varied than in any other part of the island. The Humber River, which flows into the Bay of Islands, is the largest river in Newfoundland. At the bottom of St. George Bay are found extensive sandy flats and banks of sand and mud. The rivers abound in salmon and trout. The soil at St. George Bay is the best in the island.

Space does not permit a description or even a mention of the innumerable bays, inlets, and harbors, or the peninsulas, headlands, and capes on the northeastern coast of Newfoundland, which is that most likely to have been the first landfall of the Norsemen when driven southwestward

By favor of Prof. H. K. Burrison

Mouth of Indian Brook, Hall's Bay, Notre Dame Bay, Northeast Coast of Newfoundland

Coast Outside of St. Johns, East Coast of Newfoundland

The Holloway Studio

on their voyages to Greenland. Notre Dame Bay presents an open front of some fifty miles between Cape St. John and Fogo Island. Many of the islands in the bay are covered with woods to the water's edge, and one of the fiords has for the same reason obtained the name Green Bay.

The eastern front of the island presents a bare and hard appearance. On the dark mountain sides only a trace of verdure is seen from the sea; the rugged islands, fronting the coast, are either bare or covered with white birds and their dung. St. John's Harbor, on the extreme eastern coast, has a narrow entrance like a mountain pass, and the harbor itself resembles a mountain lake.

Nova Scotia and Cape Breton Island

Nova Scotia is a detached peninsula, which stretches out in an east-northeasterly direction from the American continent, with which it is connected by a relatively narrow isthmus. The southeast coast, from Cape Sable to Cape Canso, between lat. 43° and 45°, faces the Atlantic, and has a length of about two hundred and forty miles. It is scooped out into innumerable bays and coves, and is fringed with thousands of rocky islets. The coast is rocky, and, as seen from the sea, gives an impression of barrenness and desolation. In some parts there are naked cliffs, red or white; in other parts the capes and outer islands are bound with black and slaty rocks, generally stretching out in spits towards the east. The headlands have beaches of rolled stones and shingles, and are more or less wooded. In the bays between the headlands are found numerous sand beaches. The average breadth of the peninsula is about sixty miles; it is traversed by ranges of hills, running, generally, in the direction of

the peninsula, from southwest to northeast. The hills are, on the whole, low, rarely exceeding from five to six hundred feet, but some of the elevations reach a height of eleven hundred feet. Inland there are extensive fertile, alluvial tracts, producing rich crops; and large forests supply excellent timber.

At Cape La Have the land is, or has been, thickly wooded. Where the hills are bare of trees, they are covered with blueberry and cranberry bushes.

Cape Sable is the southwestern extremity of Nova Scotia; it is at the southern end of Cape Sable Island, which is thickly wooded and very flat. The small island on which the cape is situated is covered with low sand dunes. The tides on the Atlantic coast are weak; only round Cape Sable the tidal range is greater and the streams are stronger.

The climate of Nova Scotia is intermediate between that of Lower Canada and that of the countries in the same latitude on the Atlantic coast of Europe, the continental character of the climate being alleviated by the proximity of the ocean and the Gulf Stream. The climate is extremely variable, and sudden changes of temperature are common. Spring is short, and the transition to summer rather sudden. Summer is very warm, with frequent dense fogs. Fall is pleasant and long; it often ends in a period of "Indian summer." Winter seldom sets in till the close of December, and lasts till the end of March, generally with six or eight weeks' sleighing. The real spring approaches tardily, and May ends before the fields become green.* In some districts good grapes are raised in the open air. Nova Scotia is covered to a great extent by dense forests. Ash, beech,

* Hugh Murray, *British America*, New York, 1855.

Oakland Shore, East Coast of Nova Scotia

By permission of the Canadian Northern Railway Company

By permission of the Canadian Northern Railway Company

Lockeport Beach, East Coast of Nova Scotia. About thirty miles northeast of Cape Sable

various birches (including the canoe birch), maple, oak, pine, and spruce are the most common trees indigenous in the country. Wild animals are abundant, among which are moose, caribou, and red deer. Fishing is good.

The Indians found by the Europeans in Nova Scotia in the sixteenth century were of the Micmac tribe described in the last chapter.

The largest and safest harbor on this coast is at Halifax. It is about three-quarters of a mile broad, but at the Narrows it contracts to less than one-quarter of a mile, and then expands into Bedford Basin, which has an area of ten square miles and is completely landlocked. Halifax harbor is never closed by ice. Several other inlets, such as St. Margaret Bay, Jeddore Harbor, Whitehaven, and others, possess the same feature of a narrow entrance leading to an extensive basin inside. At the mouth of the great rivers, such as Musquidoboit, sandy bars, flats, and beaches are formed. At the entrance to Musquidoboit Inlet is a sandy beach two to three miles long enclosing an expanse of water filled with islands.

Northeast of Nova Scotia, separated from it by the narrow Gut of Canso, is Cape Breton Island. The shores of this island are rugged, and are indented by numerous bays and inlets, of which the Bras d'Or practically penetrates the whole island from northeast to southwest. The southeastern coast as far as Gabarus Bay is low, and the shore is broken into numerous lakes and ponds, protected from the sea by beaches of gravel and small rocky islands and ledges. Near Cape Breton the land is somewhat higher, the hummocks in the background rising to the height of from two to three hundred feet. Cape Breton is low, rocky, and covered with grassy moors.

The east coast of the island from St. Anne Bay to the northernmost point, Cape North, is bold and mountainous. The land is here much higher than on the southeastern coast, and the mountains attain a height of nearly fourteen hundred feet. Going round Cape North and down along the west coast of the island, facing the Gulf of St. Lawrence, we find no harbor or safe anchorage for ships north of Cape Linzee. The general character of the coast is high and bold; the cliffs are precipitous, in many cases perpendicular, and boats can land only in fine weather at the mouth of ravines or small streams. Port Hood is the only safe anchorage on the west coast to the north of the Gut of Canso. In a recent description* this coast has been described as "an unexplored and trackless land of forests and mountains." The whole island, in fact, is covered with woods, except in places where the rocks come to the surface, or where small patches are cleared for cultivation.

Crossing the Gut of Canso, we come to the north coast of Nova Scotia facing the Northumberland Strait. The northeastern point of this coast is Cape George, and from here to Merigomish Harbor the coast is bold and clear. The land rises some miles within the coast to a ridge running parallel with the coast and attaining in High Hill a height of one thousand feet above the sea. There is no harbor on this part of the coast, but from here on, the coast becomes indented with bays and harbors.

The climate of Cape Breton Island is harsher than in Nova Scotia; spring is later and summer is retarded by the cold wind from the neighboring sea, which is usually covered with drift ice frequently forced against the coast in large

*Osgood, *The Maritime Provinces*. (See also Storm.)

By permission of the Canadian Northern Railway Company

Cheboque River near Yarmouth on the Coast of Nova Scotia
Facing the entrance to the Bay of Fundy

Surf at Great Head, Mount Desert Island, Maine
The Detroit Publishing Company

masses by northeast winds. Jacques Cartier, on his first voyage in 1534, visited Prince Edward Island and Chaleur Bay in New Brunswick on the Gulf of St. Lawrence. Speaking of Prince Edward Island, he says:* "The lands where there are no woods are very beautiful, and all so full of peas, white and red gooseberries, strawberries, raspberries, and wild grain like rye, that it looks as if it had been sown and cultivated." Chaleur Bay is described as follows: "The heat is more temperate than in Spain, and the land is as beautiful as can be seen anywhere and as level as a pond. And there is not here the smallest spot, sandy and bare of woods, but that it is full of wild grain which has an ear like rye and a seed like oats, and peas that grow as thick as if they were sown and cultivated, and white and red gooseberries, strawberries, raspberries, red roses, and other herbs of good and fine odor. There are likewise many beautiful prairies and good grass, and ponds with an abundance of salmon."

The Entrance to the Bay of Fundy

The Bay of Fundy separates the province of New Brunswick from the southwestern part of Nova Scotia. It extends about a hundred miles in a northeasterly direction with an average breadth of thirty miles. On the western side of the entrance to the bay are Grand Manan and several smaller islands as well as numerous "dangers." Inside Grand Manan is Passamaquoddy Bay. On the southwestern coast of Nova Scotia we find Yarmouth Sound and St. Mary's Bay. The Bay of Fundy is deep, but navigation is ren-

* Michelant and Ramée, *Relation Originale du Voyage de Jacques Cartier*, Paris, 1867, pp. 24, 25.

dered difficult by numerous off-lying dangers fringing the approaches, by rapid tides, and by frequent fogs.

Grand Manan is about thirteen miles long and has an extreme breadth of six miles. The channel between this island and the mainland is free from dangers, but the tides are strong and attain at some points a speed of five miles an hour. From the summit the land slopes gradually to the eastward, but on the west side the shore terminates in steep cliffs, some of which are nearly four hundred feet high. The soil is generally good, and the island is thickly wooded, producing fir, beech, birch, and maple in good sizes. The eastern coasts abound with fish; and there was probably good hunting here as well as on the adjoining mainland in former days. Birds also were probably numerous before the arrival of the white man. The hills of the mainland are visible from the coast, but they are of very moderate height.

Passamaquoddy Bay is a large inlet, about ten miles deep. On the western side of the bay is St. Croix River. The bay is never closed by ice and affords excellent shelter. Its waters abound in fish, comprising herring, cod, and mackerel.

Coast of Maine

The Maine coast is broken by numerous fiords and bays, and is fringed with off-lying islands, islets, and rocks. It abounds in good harbors, but many winters they are closed by ice. South of Cape Elizabeth there are few harbors; the bays are wider, with long strips of sandy beach between rocky points.

Fogs are very frequent in summer and sometimes of long duration. At the northern part of the coast the tidal streams are very strong, and the range of tide great. This coast is

Coast Scenery at Portland, Maine

The Detroit Publishing Company

generally of moderate height and only Mount Desert Island has a truly mountainous character, but on the whole it presents a dark, rugged, and rather forbidding aspect to the sea. The whole country is, or was formerly, densely wooded. According to Lescarbot,* the French found wild grapes in great abundance at the Saco River in 1606, and later grapes were found on the shores of the St. John River in New Brunswick.

Coasts of New Hampshire, Massachusetts, and Rhode Island

The coast line of these states is extended and varied; it includes the peninsula of Cape Cod, terminating in Race Point on the north and Monomoy Point on the south, whence it trends westward.

Southward of the peninsula of Cape Cod are the two large and low islands Nantucket and Martha's Vineyard, surrounded by extensive shoals.

There are many excellent harbors and anchorages along this coast, in particular in the principal bays: Ipswich Bay, Boston Bay, Cape Cod Bay, Nantucket and Vineyard Sounds, Buzzard's and Narragansett Bays. The coast northward of Cape Ann is generally low and sandy, but between Cape Ann and Boston Bay, including this latter, it is bold and rocky. South of Boston the coast is again in most parts sandy, and a fine beach, three miles long, is found at Nantasket. Plymouth Harbor is enclosed between the mainland and a long sandy beach, forming a sort of lagoon, which is dry at low water except for a narrow channel.

The shores of the entire peninsula ordinarily included

* *Histoire de la Nouvelle France*, Paris, 1866, Book II, 532.

under the name of Cape Cod, as well as the outlying islands, are low and sandy, presenting extensive white sand beaches to the sea. On the east coast of the cape are found lagoon-like ponds, protected from the ocean by long narrow beaches with sand dunes. Narrow entrances with shallow water lead into these ponds, as at Nauset Harbor and Long Pond. The cape is largely wooded and was probably formerly completely covered by primeval forests. The south coast of Rhode Island presents largely the same features as the coasts of Cape Cod.

The winter is shorter than in Maine, but may be very cold along the coasts of these states, while the summer may be at times oppressively warm.

The Atlantic Coasts of New York and New Jersey

The state of New York borders the Atlantic along the south coast of Long Island, which in its general character resembles the coast of New Jersey so much that they may be described together. The shore consists of low sand hillocks, backed by dark woods. Behind the white sandy beaches are enclosed lagoons or ponds with narrow and shallow outlets to the sea. Farther inland may be seen some low hills, but otherwise there are no striking natural features recognizable from seaward. The beaches are generally more than a mile in width. The coast-line is broken by New York Bay, which is about six miles wide at the entrance. The winter along this coast is severe and the summer warm, with occasional periods of intense heat. Ice may sometimes cause obstruction in the sounds and harbors.

Photograph by Nichols & Atkins, Harwich, Mass.

East Coast of Cape Cod

"There were white extensive sands, wherever they went, and the beach was not steep"

[*Ok sandar hvítir víða, þar sem þeir fóru, ok ósæbratt, see p.* 85]

CHAPTER XI

GEOGRAPHICAL ANALYSIS OF THE VINLAND VOYAGES

WE shall now review those statements of the sagas which have geographical bearing and compare them with actual conditions on the coasts of America.

The topographical description of the new land given in the sagas is sometimes typical of certain parts of the American coast, sometimes of others. Although the localities visited and explored by the Norsemen cannot be determined exactly, we are led by a process of elimination to certain important conclusions as to the probable extent of their voyages and the lands they visited.

In this inquiry it must be realized that confusion may have existed in the mind of the Norse explorers and saga-writers as to the identity of the various newly discovered lands, so that different names may have been given to the same land, and the same name may have been applied to different lands by different explorers. Thus, for instance, the Markland of one expedition may have been the Vinland of another, and the Helluland of one expedition may not have been the Helluland of another.

The locations of the three lands, Helluland, Markland, and Vinland, are, however, interdependent within each voyage, being connected in some measure by stated courses and distances (days' sail). Although in many cases the statements that concern navigation are vague and their interpretation doubtful, and although they may be affected by errors, we may nevertheless accept as a broad fact that Markland was in a lower latitude than Helluland, and that Vinland was in a still lower latitude than Markland. If, then, we

assume a location for one of these lands on a certain voyage, we therewith, by implication, also make assumptions as to the location of the others on the same voyage. It is, therefore, desirable for the sake of clearness to deal with each voyage, and each group of voyages, separately.

Bjarni's Voyage (*Gþ*)

The first land seen by Bjarni, when driven out of his course on the way from Iceland to Greenland, was covered with woods and had low hills. He sailed on for two days with land on the port side, apparently with the wind on the beam, and he then sighted a second land, which was flat and wooded. He turned the bow from the shore, sailed out on the open sea, and continued for three days with a southwest wind, when he saw a third land, covered with mountains and glaciers. Bjarni kept going along the coast and saw that it was an island. Again he turned the stern to the land and sailed out on the sea. The wind was still from the southwest and was very high. After four days' sail he arrived at Herjulfness in Greenland.

The description of the land seen on the first landfall may well be reconciled with the northeastern coast of Newfoundland. The second land sighted might be at Hamilton Inlet on the Labrador coast, where the land is low and covered with scrub woods. The third landfall might be Resolution Island, where glacier-like formations are found and where also the Grinnell glacier is visible. From Resolution Island to Cape Desolation, the southwestern point of Greenland, is about four hundred and eighty miles, which distance, with a stiff southwesterly wind, might easily be covered in four days.

Coast Scenery at Osterville, Nantucket Sound

By courtesy of Mrs. Wm. L. Garrison

Coast Scenery at Osterville, Nantucket Sound

By courtesy of Mrs. Wm. L. Garrison

The itinerary here suggested makes it necessary to assume that the *dægr* (day) referred to in the saga was of twenty-four hours, as in the tilfts around Iceland. As explained in Chapter IV, a day's sail is in such a case equivalent to a distance of about one hundred and fifty miles.

Leif's Discovery of Vinland on his Return from Norway (*ER*)

We find in this account only a bare mention of the fact that Leif had discovered new lands with vines, self-sown wheat-fields, and *masur* trees. These brief statements indicate that Leif's Vinland must have been located south of Nova Scotia.

Leif's and Thorvald's Exploring Voyages to Vinland (*GÞ*)

Leif first went to the land which Bjarni had seen last. There was no grass, but great glaciers were seen inland, and the land between the glaciers and the sea looked like one large stone. This description corresponds well with Baffin Land, which would thus be Leif's Helluland. They sailed on and found another land, which was flat and covered with woods, but nothing is said as to how many days they sailed. There were extensive flat white sand beaches. This land was called Markland. Going through the geographical description of the coasts of North America, given in Chapter X, it will be seen that on the Atlantic coast of Labrador only the strand at Cape Porcupine, just south of Hamilton Inlet, corresponds, and that very imperfectly, with this description of Markland. Everywhere else the coast is bold and rocky. The Atlantic coasts of Newfoundland, of Cape Breton Is-

land, of Nova Scotia, and of the mainland as far as Cape Cod Bay, are likewise generally of a bold and rocky nature. Only at the southwestern point of Nova Scotia, at Cape Sable, do we find a flat coast, in parts sandy, covered with woods. Otherwise sandy beaches are found only locally and of small extent in the bays or fiords between rocky headlands and at the mouth of rivers, especially in Nova Scotia.

South of Boston Bay, extensive white sandy beaches form a characteristic feature of the Atlantic coast, beginning at Cape Cod and the adjoining region, including Nantucket Sound and the shores of Cape Cod Bay.

From Markland Leif sailed out on the open sea with a northeast wind, and had two days' sail before he saw land. He sailed westward through or into a channel between an island and a cape, which extended northward from the land. Here the ship ran aground and stood dry at ebb tide; the sea was visible only at a great distance. At high tide Leif took his ship up a river into a lake, and here he built his houses. This place was called Leifsbooths, and the land was called Vinland. Salmon was plentiful in the river and in the lake. The land seemed so good that there would be no need of storing fodder for the cattle for the winter. During the winter there came no frost, and the grass withered but little. *Vínber* and *vínvið* were found and gathered. Trees were felled for obtaining a cargo of timber for the ship.

On Thorvald's expedition to Leifsbooths the Norsemen lived by fishing during the winter. In the spring an exploring party was sent along the western coast, or westward (?) in the large boat. The land was found to be beautiful, the woods came close to the sea, and there were white sands. There were many islands and the water was very shallow.

The same summer Thorvald sailed with the ship eastward (or along the east coast) and north of the land (or northward along the coast). The words *at sumri öðru*, which literally mean "the following summer," are here translated "the same summer," namely, that following the spring in which the boat expedition was sent out. The explorers came to a cape, Kjalarness, and thence sailed eastward along the coast (or east of the land) to a fiord, where they landed on a beautiful headland covered with woods. This headland was called Krossaness. It was here that they met the Skrælings, and that Thorvald lost his life. The general impression obtained by this description is of a flat, sandy, and wooded coast fringed with shallow lagoons (ponds) or lakes, and numerous islands. The woods extended down to the white sandy beaches. The climate was mild or warm; the sea was not frozen in the winter, for the Norsemen lived by fishing during that season. Grapes were found, and the cattle grazed all winter.

On the basis of this description we shall now try to locate Leif's and Thorvald's Vinland:

1. *Vinland in Labrador or Newfoundland.* If Markland was at Cape Porcupine, we must seek Vinland (*i.e.*, Leifsbooths), farther down the southeastern coast of Labrador, or on the northeast coast of Newfoundland, since it was two days' sail with a northeast wind from Markland to Vinland. It is clear, however, that these ironbound coasts are entirely out of the question. Sandy beaches are, indeed, found here and there at the bottom of fiords and bays in such places as Sandwich Bay, St. Lewis Inlet, Anse à Loup, Forteau Bay, and Blanc Sablon, but in other respects the geographical conditions do not at all conform to the description in the

saga. We shall, therefore, discard this solution as at least highly improbable.

2. *Vinland in the Cape Cod region.* If Markland was at Cape Sable, Vinland would be on or near the Cape Cod peninsula. The two days' sail on the open sea with a northeast wind from Markland to Vinland agrees well with this solution, and the geographical description corresponds perfectly with the conditions in this region. Since the contour of the coast may have undergone considerable changes during the last nine hundred years, it is futile to attempt to locate Leifsbooths accurately. Assuming that it was somewhere in the region of Nantucket Sound, Thorvald's two exploring expeditions may, with slight modifications in the text, be made to conform fairly well with the configuration of the coast. The first expedition went westward through the landlocked waters of the sound towards Narragansett Bay; the second went round the east coast of the cape, whence they may have sailed across Cape Cod Bay and followed the coast northward. Cape Cod itself may have been Kjalarness. Krossaness may have been Nahant, Marblehead Neck, or some other headland on this coast.

3. *Vinland at New York Bay.* Although the geographical conditions in the neighborhood of New York Bay fit the description almost as well as at Cape Cod, this solution is less probable than the more northern locality. The navigation of Thorvald cannot be satisfactorily accounted for. We shall therefore regard the second solution as the most probable.

In order to throw further light on the problem, we shall now discuss the important astronomical remark, found in the account of Leif's voyage, that day and night were in Vinland more nearly of equal length than in Greenland or

Iceland, and that the sun had *eyktarstaðr* and *dagmálastaðr* on the shortest day of the year. The astronomer H. Geelmuyden has shown* that the terms *eyktarstaðr* and *dagmálastaðr* refer to an azimuth at sunset and sunrise respectively, and not, as supposed by some, to a point of time.

Geelmuyden determined the exact value of the azimuth indicated by *eyktarstaðr* from the following passage in the old Icelandic law-book, the *Grágás:* "Then is *eykt*, when *ut-suðrs-ætt* is divided into thirds, and the sun has reached through two-thirds, and there is one-third left." Since *ut-suðrs-ætt* is that octant of the horizon which has southwest in the middle, that is, from S $22\frac{1}{2}°$ W to S $67\frac{1}{2}°$ W; Geelmuyden concludes that *eyktarstaðr* was the direction: S $[22\frac{1}{2} + \frac{2}{3} \times 45]°$ W = S $52\frac{1}{2}°$ W. He then calculated the latitude where the sun would set in this direction on the shortest day of the year in the beginning of the eleventh century, and found this latitude to be 49° 55′.

Bearing in mind the crudeness with which the azimuth was probably determined, Geelmuyden's latitude can be considered only a mean value. It seems reasonable to admit a possible error of at least 5° in the azimuth, to which, under the given circumstances, there would correspond an error of about 5° in latitude. Moreover, since the sun was probably setting and perhaps also rising over the land, the azimuth was apt to be underestimated. Admitting an error of several degrees due to this cause, the latitude would be overestimated by the same amount. The region where Leifsbooths must be sought would accordingly be between about 40° and 50° latitude, comprising the coasts from Sandy Hook to Halifax.

* *Arkiv for Nordisk Filologi*, III, 128.

The mere fact that the explorers recorded these phenomena shows that there must have been a considerable difference in latitude, probably not less than from 15° to 20°, between Greenland and Vinland. Now, the Eastern Settlement in Greenland was in about lat. 60°, and it seems, therefore, much more likely that Vinland was in the southern part of the region determined by the observation, than in the northern. Since Cape Cod lies between lat. 41° and 42°, we find in the astronomical remark further support for the belief that Leif's Vinland was in the region of Cape Cod.

Karlsefni's Expedition (*ER*)

We base the geographical analysis of this voyage on the account of *ER*, which in this case appears to be the most complete and reliable. The few statements of geographical bearing found in the *Flatey Book* appear to be borrowed from the description of Leif's Vinland, and are based on the assumption that Karlsefni went to Leifsbooths.

According to *ER*, Karlsefni's expedition first sailed from Ericsfiord to the Western Settlement, where it appears that Gudrid's farm in Lysufiord was visited. From Lysufiord the expedition went to Bjarney which was probably situated on the coast between lat. 64° and 69° (see Chapter II); in other words, it sailed from three hundred to six hundred miles up along the Greenland coast before it started across Davis Strait. By some this navigation is considered unreasonable, and is taken to prove that the whole story is unreliable, but here, as in many other cases, a more careful study of the actual conditions reveals an explanation which transforms the "unreasonable" statement into important internal evidence of truth. In fact, several good rea-

sons may be given for the navigation followed by Karlsefni, apart from a desire, on his part, to visit the farm of Gudrid.

In the early summer months the southwest coast of Greenland is blocked by the East Pack, sometimes, as for instance in 1902,* from Cape Farewell up to lat. 66°. An open channel, however, is left along the coast. It is through this channel, for instance, that the cryolith ships, leaving Ivigtut during this season, have to sail northward, until they reach a point where they are able to cross the ice-laden current. How far north the ships have to sail inside the ice depends on ice conditions, which vary from year to year. Thus Karlsefni was perhaps forced to sail up along the coast, at least as far north as the Western Settlement, before he could get through the ice.

Another reason why the expedition went so far north and west before starting may be found in the fact that it obtained thereby a good height before steering across Davis Strait with the northerly and northwesterly winds which prevail there at that season.† Karlsefni may have benefited by the unfortunate experience of Thorstein, who was driven too far to the east on his voyage.

Finally, at the Western Settlement the expedition would be nearer the narrowest part of Davis Strait, a fact which may have been known from earlier voyages.

In other words, the navigation followed by Karlsefni was precisely that which would be followed under the circumstances by navigators who were acquainted with the conditions of wind and ice and with the geography of Davis Strait, and who were bound for Baffin Land or northern Labrador.

* V. Garde, *The State of the Ice in the Arctic Seas*, Copenhagen, 1902.

† V. Garde, *Windcharts*, Copenhagen, 1900.

From Bjarney the explorers sailed with a north wind for two days, when they saw land. This land was called Helluland because large flat stones were found there. These stones, according to one version, were more than the height of two men. There were also many white foxes. There is no mention of glaciers in this account.

If the explorers started one morning from a point on the Greenland coast in about lat. 66°, and if they sailed in a southwesterly direction (by the Norsemen considered southerly) with a speed of about six knots, in clear weather they would sight Baffin Land, or Resolution Island, two days later, in the evening. In case of mirage, so common in these regions during the summer, land may have been sighted already in the morning, two days after the start. This explanation is consistent with the account, if we reckon the *dægr* of the saga to be of twenty-four hours' duration. If the explorers started from a point somewhat farther to the south, say in lat. 64° or 65°, which is more likely, after two days' sail they may have sighted Four Peaks in northern Labrador. The large stones, *hellur*, may well be taken to refer to the boulders so common in Baffin Land and Labrador. Foxes are likewise abundant in both of these countries. Hence we conclude that the Helluland of *ER* was most probably the northern part of Labrador, or, possibly, the southern part of Baffin Land.

It is of interest to mention here the reference to Helluland that is found in a later recension of the mythical *Örvar Odd's Saga*, which probably dates from the fourteenth century. Örvar Odd, in search of his deadly enemy, came to Helluland's *óbygðir*, that is, Helluland's deserts. They sailed to the Greenland Sea and to the southwest from the

land.* Odd's son Vignir asked leave to sail ahead and show the way.

"That day they saw two rocks rise up out of the sea. Odd wondered much at this, and they sailed in between the rocks. Towards evening they saw a large island. Odd brought his ship to the shore. Vignir asked why he did that. Odd ordered five men to go ashore and look for water. Vignir said that was unnecessary, and did not allow any of the men from his own ship to accompany them. But when Odd's men had gone ashore on the island, it was not long before the island sank and they were all drowned. The island was covered with heather on the top, and they did not see it come up again. The rocks also had disappeared, when they looked in that direction."

As pointed out by Emil Svensén,† this tale indicates that Odd reached a place where the tidal range was very great, and he suggests the Bay of Fundy as the most likely place. It seems, however, much more probable that the tale refers to some point on the coasts of Hudson Strait, where the tidal range reaches some forty feet and which is much nearer to Greenland. If the tale has any actual foundation, it thus supports our conclusion as to the location of Helluland.

In *Gripla*‡ it is stated that opposite Greenland lies Furdustrands, "where there is so hard frost that the land is not, as far as known, inhabited. South of this land is Helluland, which is called Skrælingland, and from there it

* "*Sipan sigla þeir þartil er þeir kvomu i Grænlandshaf, snúa þá suðr ok vestr fyri landit.*"

† *Vinland och Vinlandsfärderna, Historisk Tidsskrift,* Stockholm, 1889.

‡ Björn Johnson's *Greenland Annals, GHM,* III, 224.

is not far to Vinland the Good, which some think extends from Africa. Between Vinland and Greenland is Ginnungagap, which flows from the sea, called *Mare oceanum* and which surrounds the whole earth." The original membrane of this manuscript is lost; it is likely that it was written long before the discovery of America by Columbus. Although the geographical notions of the writer are evidently vague and confused, his statements seem to indicate that the Greenlanders knew a land north of Helluland. If Helluland is Labrador, the Furdustrands here referred to would thus be in Baffin Land. If Helluland is the southern part of Baffin Land, Furdustrands might be in the northern part of this island.

For a correct interpretation of the name *Furðustrandir*, it is of importance to note that it is here applied to a barren iron-bound coast, probably of great extent. In Iceland the name *Furðustrandir* is not, to the author's knowledge, made use of, but the barren and bold coast between Cape North and Hunaflói, which is without any deep indentation, is called *Strandir*, which simply means the coasts or shores (see Map I), and this name occurs in several compounds. The word *furðu* means "very," "strong," "exceedingly," or "remarkable," and we are told in *ER* that it was there applied because the *strandir* were so long to sail by.

From Helluland the explorers sailed for two days and turned from south towards southeast, and found a land, wooded and with many animals.* This navigation corresponds well with the general trend of the Labrador coast. Markland would accordingly be somewhere on the middle of the coast, as at Nain, in lat. 56½°, or perhaps somewhat

* *þaðan sigldu þeir 2 dægr, ok brá til landsuðrs or suðri.*

farther south. It could not be much farther north, since Markland means Woodland, and since the limit of trees is in lat. 58°. A bear was killed on an off-lying island, probably a polar bear, which animal was at that time abundant on the Labrador coast.

From Markland the explorers sailed on southward along the coast for a long time and came to a cape, Kjalarness. The land was on the starboard side. There were long strands and sands. The strands were called Furdustrands. Then the land became indented with bays, and they stood into a fiord, at the mouth of which there was an island, Straumey, round which there were strong currents. Straumey was covered with birds' eggs. The strong currents show that Straumfiord must have been a deep inlet of great extent, probably widening out inside the entrance, for the tides otherwise are not strong on the Labrador coast, except at Hudson Strait.

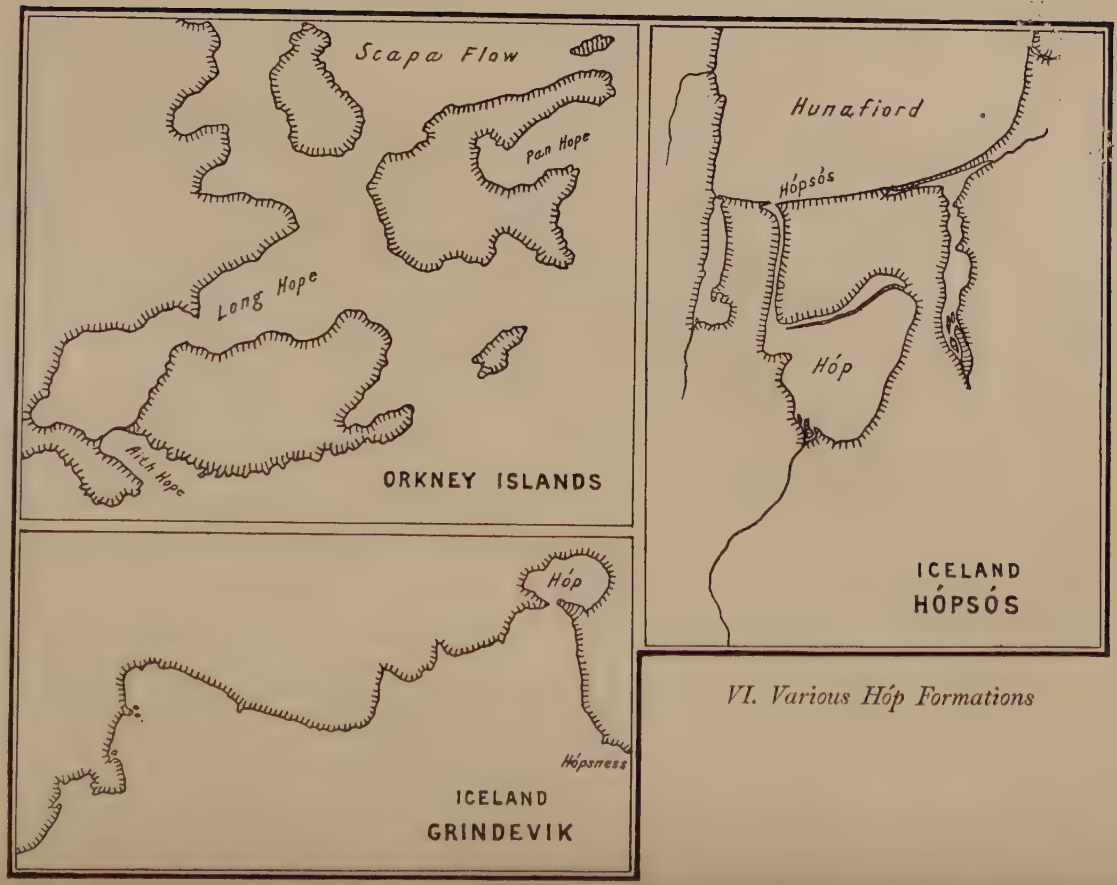
It is here mentioned that there were mountains, a fact which at once excludes from consideration the coast of the mainland south of Mount Desert, and limits our conjectures to Labrador, Newfoundland, Nova Scotia, and perhaps certain parts of the mainland from Mount Desert northward. The winter in Straumfiord was severe, and the fishing failed, conditions which correspond best with the coast of Labrador and Newfoundland, for they are blocked by ice throughout the winter, but which do not correspond with the temperate climate of Nova Scotia, or with the coast of Maine and New Brunswick.

It appears that the explorers realized that they had not yet reached Vinland, for it is told in the saga that Thorhall Hunter was dissatisfied at not obtaining any wine, and

that he finally departed from Straumfiord with the purpose, according to his verse, of returning to Greenland. He sailed northward along Furdustrands and past Kjalarness, intending to beat past the coast or around the cape, to the westward, but there he met strong westerly winds and was driven over to Ireland.

Two exploring expeditions were carried out from Straumfiord as a base, and are described in some detail. The first expedition went southward for a long time, apparently along an eastern coast, until it reached a river, which flowed out into the sea through a lake. There were great beaches, *eyrar* (a term that will be discussed presently), before or across the mouth of the river (*fyri árósinum*), and they could not enter the river except at high tide. They sailed into the mouth of the river and called the place Hóp.

Here they found self-sown wheat-fields on the low land, but vines where the ground was high; *vínber* are not mentioned. There were many fish and plenty of game in the woods. There was no snow during the winter, and the cattle lived by grazing. They had several visits from the Skrælings, the first in the early summer soon after their arrival at Hóp, the second and third in the following spring, when the Skrælings brought skins and traded with the Norsemen. This peaceful intercourse, however, soon came to an end, and a fight occurred, after which the Norsemen decided to leave. They soon after sailed northward along the coast. On their way to Straumfiord they found five Skrælings, whom they killed. The Norsemen afterward came to a cape, where there was a great number of animals, and the cape was completely covered with dung. On their return to Straumfiord they found an abundance of all that they needed.



VI. Various Hóp Formations

The second expedition apparently departed from Straumfiord the same summer that Karlsefni returned from Hóp. It went northward around Kjalarness, and thence westward with the land on the port side. The country there was a wooded wilderness, with scarcely any open spaces. When they had sailed for a long time, they came to a place where a river flowed down from the land from east to west, which shows that the coast was probably trending southward. They sailed into the mouth of the river and lay to by the southern bank. It was here that Thorvald Ericsson was killed by a native (uniped), who fired an arrow at him. There were mountains which they thought were the same as those seen at Hóp, and they thought that there was very nearly the same distance from Straumfiord to both places.

In old Norse the term *hóp* has a definite meaning, referring to an inlet, fiord, or harbor, characterized by a narrow entrance, often the outlet of a river, and widening out inside, not far from the entrance, to a larger expanse of water, frequently a lake, or lagoon, into which a river empties. *Hóps* are found in Norway, Iceland, Greenland, and elsewhere, where the Norsemen settled. The Maps VI show several examples of this formation, which still bear the name of Hóp.

The term *eyrar* is applied to long narrow strips of sand and gravel formed at the entrance to rivers and fiords. In some cases they take the shape of spits or tongues projecting at right angles to the coast, often curving round at the end. *Eyrar* of this type are in English called "hooks," and are found, for instance, on several western fiords in Iceland, at Provincetown on Cape Cod, and in many other places. In other cases *eyrar* are formed at the mouth of rivers, par-

ticularly on flat and sandy coasts. Here they take the shape of long and narrow beaches, separating a large expanse of shallow water, a pond or lagoon, from the sea. The beaches being broken by one or more channels, through which the river has an outlet, we have a combination of a *hóp* with *eyrar*, such as described at the Hóp of the saga. This formation is very common on the Atlantic coast of the United States, and is in fact a typical feature on the shores of Cape Cod, Long Island, New Jersey, and farther south. The *hóp* at Hunafiord in Iceland, shown on Map VI, belongs to the same class, but the *eyri* has here in course of time developed to an extensive and broad sandy plain.

We might thus be led to believe that the Hóp of the saga was either on Cape Cod or farther south, were it not for the fact that, according to the saga, the land was of a mountainous nature and that no mountains are found on this part of the coast. The only mountainous peninsulas of any size on the eastern coasts of North America, stretching out in a northerly or northeasterly direction, are Nova Scotia with Cape Breton Island and the northwestern part of Newfoundland.

When we now try to reconcile the geographical account of Karlsefni's voyage with the conditions actually existing in Nova Scotia and Newfoundland, we soon meet several obvious discrepancies in point of topography and navigation. In fact, it seems impossible to find any solution which tallies completely with the saga. The tale given in *ER*, which at first sight looks connected and logical, buttressed by its good style and antiquity, does not stand a careful critical analysis any more than does the account of the voyages given in *GÞ*. Like this latter, it falls to pieces, and can be

assembled to a connected whole only after certain modifications and transpositions.

We are driven to the conclusion that what is presented in the *Saga of Eric the Red* as one combined expedition is in reality a compound of two or more voyages. Probably a partial superposition of Leif's and Thorvald's voyages on that of Karlsefni has taken place in *ER*, while, on the other hand, the voyages of Karlsefni and Freydis are wrongly separated in *GÞ*. The description of *eyrar*, vines, self-sown wheat, and the mild winter climate at Hóp (*ER*), as also the mention of *vínber* on Karlsefni's voyage (*GÞ*), should probably all be transferred to Leif's and Thorvald's voyages. These traits may have been borrowed because the explorers were anxious to make people believe that they had reached Vinland. Similarly, the account of Karlsefni's navigation on his two expeditions from Straumfiord appears to have been corrupted to some extent by an intermingling with the report of Thorvald's navigation.

With these assumptions we have no difficulty in offering a reasonable solution of the geography of Karlsefni's voyage. The location of Straumfiord must, on account of its severe winter climate and its mountainous surroundings, be sought either in Labrador or Newfoundland. The navigation from Straumfiord to Hóp and to the other side of a mountainous peninsula which extended northward appears to have taken place without crossing any great stretch of open sea. Hence the peninsula can hardly have been Nova Scotia and Cape Breton Island, since we find no statement in the saga to indicate that the explorers sailed across a wide channel like Cabot Strait. Nor do we find any indication that they sailed round the eastern extremity of Newfound-

land. It is simply stated that they sailed southward along the coast.

The peninsula that best fits the description is Le Petit Nord, which extends for one hundred and fifty miles in a NNE direction from the northwestern corner of Newfoundland, ending in Cape Bauld, and separated by the narrow Strait of Belle Isle from Labrador. If we adhere strictly to the text of the saga, we might now conclude that Straumfiord was on one of the bays on the northeast point of this peninsula, as, for instance, on Hare Bay. In fact, the description of the navigation suggests that Straumfiord was situated on the east coast, but near the extreme point of a peninsula which extended towards northeast. In such a case Cape Bauld would be Kjalarness and Furdustrands would be the coast between this cape and Straumfiord. Hóp would be found a considerable distance farther south on the east coast of the peninsula, and we have no difficulty in finding a river on the west coast of Newfoundland which would mark the extreme point of the last exploring expedition. This solution agrees also with Thorhall Hunter's navigation when he beat westward past Kjalarness, and corresponds with the conception of Vinland according to Sigurðr Stefánsson's map. It is, however, contradicted, if not disproved, by the fact that none of the bays on the east coast of Le Petit Nord exhibit the feature of strong currents which gave to Straumfiord its name. Moreover, the length of the exploring expeditions undertaken from Straumfiord to points at the foot of the peninsula in such a case would not be more than from one hundred to one hundred and fifty miles, and it is unlikely that the natives who attacked the explorers at Hóp would leave them unmolested at a point on the same

coast only one hundred miles farther north. Finally, we find no place for Furdustrands between Kjalarness and Straumfiord.

For such reasons we conclude that while the exploring expeditions probably did take place down along the east and west coasts of Le Petit Nord, Straumfiord was not situated on this peninsula, but somewhere on the east coast of southern Labrador. This solution becomes possible if we admit that a slight confusion exists in the geographical statements of the sagas.

It may be thought unlikely that the explorers should settle on the inhospitable coast of Labrador when they could find better conditions by simply keeping on southward along the coast. As shown in the last chapter, however, the fiords in southern Labrador are, many of them, very attractive in summer time. The place which corresponds better than any other on the east coast of Labrador with the description of Straumfiord is Sandwich Bay, which in the eighteenth century was selected by Cartwright as the most suitable place on this coast for a settlement. The tidal currents round the islands at the entrance to the bay are strong, as described in the sagas.

Sandwich Bay is situated just south of the sandy strand at Cape Porcupine which separates it from Hamilton Inlet. North of Hamilton Inlet the coast trends northwest to Cape Harrison, and thence for a long distance it trends still more to the west, corresponding well with the navigation of Thorhall Hunter when he sailed from Straumfiord. South of Sandwich Bay, between this bay and the Strait of Belle Isle, there is a long stretch of uniform barren coast which may well have deserved the name of Furdustrands.

We shall here give Captain Cartwright's impressions of this coast and Sandwich Bay, in an abridged extract from his Journal,* describing a voyage from Alexis River to Sandwich Bay.

"Of all the dreary sights which I have yet beheld, none ever came up to the appearance of this coast, between Alexis River [in lat. 52°35′] and Sandwich Bay. Most of the islands are high; the faces of all the hills which front the sea are scarce anything but bare rocks. The spots where any verdure was likely to appear, were covered with drift banks of snow; the shore was barricaded with ice seven feet thick [in the beginning of July, 1775]; most of the best harbors were then not open. The ice extended at least fifty leagues from the shore. But we no sooner entered Cartwright Harbor, than the face of nature was so greatly and suddenly changed, as if we had shot within the tropics. There we saw neither ice nor snow; the hills were of a moderate height, completely covered with spruces, larches, firs and birch, and the shores were bordered round with verdant grass. The water too, instead of pans of ice, was mottled over with ducks and drakes. The sun was extremely hot, and zephyrus played upon us with tropical warmth."

We can well imagine the delight of the Norsemen on getting inside the outer barren islands and entering this smiling bay, rich in game and fish, with good timber and good grass for the cattle, and with an excellent harbor. We can understand that the explorers, not realizing the severity of the Labrador winter, should determine to settle there, at least provisionally, until they had discovered better places for settlement farther south.

* Townsend, *Cartwright's Labrador Journal.*

The first exploring expedition, we now imagine, went down along the coast southwards, that is, along Furdustrands, across the Strait of Belle Isle to Cape Bauld (Kjalarness), and down along the east coast of Le Petit Nord peninsula, at least as far as Sop's Arm on White Bay. Sop's Arm, or some other inlet on the northeast coast of Newfoundland, then becomes Hóp.

The second expedition from Straumfiord went down along the west coast of Newfoundland, and may have reached Bonne Bay or one of the bays farther south. The "wooded wilderness" along which they sailed, according to the saga, corresponds well with the coast facing the Strait of Belle Isle and the gulf north of Bonne Bay. High mountains are found between Sop's Arm and the western fiords, visible from both sides as represented in the saga. Bonne Bay is about the same distance from Cape Bauld as Sop's Arm.

Comparing Maps VI and IV, it is seen that, as to configuration, Sop's Arm well deserves the name of Hóp, but many other inlets farther to the east fulfil this requirement. In fact, although Sop's Arm in several respects corresponds well with the Hóp of the saga, we do not insist upon this locality as the only possible solution. The statement in the saga that the same mountains were visible from Hóp as were seen from the western fiord may be erroneous. Sop's Arm, with its steep, densely wooded shores, does not offer as good conditions for settlement, notably as to pastures, as other places further to the east, such as, for instance, Bay of Exploits and Gander Bay.

We must, therefore, admit that Hóp may have been anywhere on the northeast coast, and the western fiord any-

where on the western coast of Newfoundland. The natives at Hóp, as well as the uniped seen on the last expedition, were probably Red Indians.

On the return voyage from Straumfiord to Greenland, Karlsefni had a southerly wind and touched again at Markland. The description of the natives whom they met here seems to show that they were Eskimos, thus confirming the theory that Markland was in Labrador.

It is clear that other solutions than the one here proposed can be offered, but it seems certain that none can correspond in a complete manner with the account in *ER*. Any conceivable solution will conflict with the saga in one or more important points. The solution which, so far, has been most generally accepted, is that offered by Storm, who places Markland in Newfoundland, Straumfiord and Hóp on the southeast coast of Nova Scotia, and Kjalarness with Furdustrands on Cape Breton Island. The second expedition from Straumfiord reached some point on the west coast of Cape Breton Island or on the north coast of Nova Scotia. This theory is so fully and well explained by Storm in his essay on the Vinland voyages that there is no reason to enter into details here. So far as the navigation is concerned, it does not correspond better with the text of the saga than that explained above, where Straumfiord is on Hare Bay on Le Petit Nord, and the climatic conditions on the southeast coast of Nova Scotia do not correspond with the winter climate at Straumfiord. Moreover, as already explained, the saga gives no grounds for belief that the explorers sailed round the extreme end of Newfoundland and that they crossed the sea at Cabot Strait.

A recent writer on the subject, Mr. William H. Bab-

cock,* places Straumfiord in Passamaquoddy Bay, New Brunswick, and identifies Straumey with Grand Manan Island. He places Hóp in Mount Hope Bay, situated on the boundary between Massachusetts and Rhode Island, adjacent to and connected with Narragansett Bay. This theory is supported by the fact that there are strong currents round Grand Manan; but on the other hand, the fishing would hardly fail during winter, as it did at Straumey, and neither the navigation from Straumfiord southward nor the mountains found at Hóp can be made to correspond even remotely with the actual geographical conditions. The second expedition from Straumfiord Mr. Babcock believes to have extended along the east coast of Nova Scotia and, as also assumed by Storm, round Cape Breton to some point on the west coast of Cape Breton Island.

* *Early Norse Visits to North America*, Smithsonian Miscellaneous Collection, vol. 59, No. 19.

CHAPTER XII

RECONSTRUCTION OF THE VOYAGES

IT has been shown in previous chapters that the saga accounts reveal several inconsistencies, showing clearly that an intermingling of the tales must have taken place, and that, therefore, any attempt to interpret the voyages, whether geographically or historically, strictly in accordance with the sagas, must fail. Only by transposing and rearranging the events is it possible to form a connected picture of what actually took place. Obviously, such an attempt at a reconstruction of the voyages must at best be conjecture, and other explanations may be offered. Though the solution here presented is that which, in accordance with the foregoing discussion, appears to the author most probable, the historical and geographical material, as well as the critical discussion, in previous chapters have purposely been given such form and scope that other solutions may be fully and fairly considered by the reader.

1. *Bjarni's Voyage.* Even if we assume, as asserted by Storm, that this voyage is a product of the imagination, the account has considerable geographical interest, because it gives us the conception which people in Iceland had formed of navigation to America and along the American coast at the time when the *Flatey Book* was written, that is, more than one hundred years before the discoveries of Columbus. Since this conception corresponds closely with the actual conditions, it must have been based on some facts.

In 985 or 986 Bjarni sailed from Iceland, bound for Greenland, but he was driven far out of his course by northerly winds and finally sighted land on the northeast coast

of Newfoundland. Knowing that Greenland was covered with glaciers, he realized that he was too far to the south, but he cannot have had any idea of his longitude. He sailed northwest and made land a second time off Hamilton Inlet. Following the trend of the coast, he reached Resolution Island, where he saw the glaciers of this island and of Baffin Land. Seeing that the land was barren and uninhabited, Bjarni now realized that he was too far to the west. He therefore steered eastward across Davis Strait, and struck the southern part of Greenland, where the Eastern Settlement was situated. As seen from Map VII, this navigation conforms to actual conditions, if we assume a day's sail to represent a distance of about one hundred and fifty miles.

2. *Leif's Return Voyage from Norway.* In the year 1000 Leif Ericsson returned from Norway, bound for Greenland. He probably sailed between the Faroes and the Shetland Isles, but was driven far to the southwest, and finally made land on the coast of America, probably near Cape Cod. Leif sent out two Scotch runners to explore the country, and these men brought back grapes and some wheat-like grasses. Perhaps it was on this occasion that a German among the crew asserted that the fruits found were actually grapes. Thereafter, Leif returned to Greenland. On some of the outer skerries he rescued a shipwrecked crew, and salved the cargo, which consisted of lumber and other goods.

3. *Leif's Voyage of Exploration to Vinland* (see Map VII). Leif, who was young and adventurous, experienced as a seaman, and who had now, moreover, acquired some wealth, determined to follow up his success by further exploring the new and rich land that he had discovered. He fitted out a ship and sailed from Greenland in the year 1001

or 1002. He followed the reverse course of Bjarni, which was probably at the same time the reverse course of his own previous voyage. His first landfall was the southern part of Baffin Land, probably Resolution Island. He found the land stony and barren, and in the background he saw the Grinnell glacier. This land he called Helluland. He sailed southward along the coast of Labrador, round Newfoundland, and down along the coast of Nova Scotia, till he came to its southwestern extremity at Cape Sable. He gave the name Markland to Nova Scotia on account of its wooded nature. He saw that this was not yet the southern land which he discovered on his previous voyage, and sailed out on the sea in a southwesterly direction. Two days' sail brought him to Cape Cod. He landed on the shores of the cape at some point where there was a long, narrow beach outside a large expanse of water, a pond or a lagoon, into which he entered. A river or brook flowed into the pond. This pond may have been on the east coast of the Cape Cod peninsula, but more probably it was on the south shore, in Nantucket Sound. Leif settled here for the winter. The climate was mild, and the azimuth of the sun on the shortest day showed clearly that the latitude was much lower than in Greenland or Iceland. Houses were built, probably log huts, and the place was called Leifsbooths. Grapes were found, and it appears that a great quantity was gathered, whence the land was called Vinland. During the winter trees were felled and a cargo of timber was obtained for the ship. When the spring came, Leif sailed back to Greenland.

The entire story of this independent voyage of exploration of Leif may possibly have been made up on the basis of his return voyage from Norway, and the statements about

the construction of houses, Leifsbooths, may be later additions. The tale still possesses great historic value, and the following tale of Thorvald's expedition is not thereby invalidated.

4. *Thorvald's Voyage.* Thorvald, Leif's brother, thought that the new land had not been sufficiently explored, and obtained permission from Leif to use his ship for a new expedition to Vinland. Thorvald consulted his brother, who gave him careful sailing directions. The year after Leif's return, he sailed, reached Leifsbooths without mishap, and put up there for the winter. During the winter the explorers lived by fishing.

In the spring Thorvald sent an exploring party westward in his large boat, while he himself went in the opposite direction with the ship. The boat expedition found the country beautiful and wooded; the woods grew down close to the white sandy beaches. There were many islands, and the water was shallow. On an island to the west, probably off Buzzard's Bay, they found a wooden shed or screen, evidently made by man, which they thought was for storage of grain. They returned to Leifsbooths in the fall. In the meantime Thorvald sailed eastward in the sound round Monomoy Point and up along Nauset Beach to Cape Cod. Here they were struck by a heavy gale, the ship was driven ashore, and the keel was broken. They stayed here for a long time while they repaired the ship. The cape was called Kjalarness.

Thence they crossed Cape Cod Bay and sailed up along the coast northward, exploring the bays on the way. They came to a headland (Nahant, Marblehead, or one of the other headlands on this coast) covered all over with woods. The

coast was steep, so that they could bring the ship right up to the shore and put out the gangplank. The scenery was very beautiful, and Thorvald liked it so well that he decided to settle there. On returning to the ship they discovered on a beach inside the headland three small hillocks, which, on nearer view, turned out to be three canoes, under each of which three Indians were sleeping. They surprised and killed these men except one, who escaped, after which they went back to the headland. They now discovered what they believed to be human dwellings higher up the fiord, probably Indian wigwams. Later, while the Norsemen were sleeping, they were surprised by the Indians, who came up in great number in their canoes. Thorvald let his men take a defensive position by holding up the shields along the sides of the ships. The Indians attacked them with bows and arrows, but soon withdrew. Thorvald, however, had received a wound, from which he died. He was buried on the headland which was called Krossaness. The Norsemen now sailed back to Leifsbooths, where they found their comrades; they stayed there during the winter, got a cargo of timber for their ship, and returned to Greenland the next spring.

5. *Thorstein's Voyage.* The third of Eric the Red's sons, Thorstein, now decided to go to Vinland in order to recover the body of his brother Thorvald, probably also for further exploration and to obtain timber. He persuaded his father to go with him, perhaps because he himself lacked experience in navigation on the ocean. At the last moment, however, Eric decided to remain at home. Thorstein sailed from Ericsfiord in the best of spirits, but was soon driven out of his course. He drifted about on the ocean for several months, got within sight of Iceland, saw birds from Ireland,

and finally returned to Ericsfiord in an exhausted condition at the beginning of the winter.

This account, which is given in essentially the same form both in *Gþ* and *ER*, is of the greatest interest and importance, because it shows how completely the Norsemen were at the mercy of wind and weather. If a ship, bound for the American coast from Greenland, could be driven to Iceland and almost to Ireland, we can understand that Bjarni, sailing from Iceland bound for Greenland, and Leif, sailing from the Shetland Isles to Greenland, could be driven over to the coasts of America.

6. *Karlsefni's Expedition.* Two years after Thorstein's return from his fruitless voyage, Karlsefni set out on a great expedition to Vinland with the purpose of settling in the new country. He had one ship together with Snorri Thorbrandsen. Another ship was under Bjarni Grimolfsson and Thorhall Gamlason, two Icelandic merchants, and a third ship under Thorvard and his wife Freydis, a daughter of Eric the Red. Although Karlsefni may have been recognized as the leader, being very experienced as a seaman, it is likely that the different partners in the expedition preserved almost complete independence.

In the same ship with Freydis was Thorhall Hunter, a man who had not adopted the Christian faith, and who, perhaps, for this reason, was not well spoken of by the saga-writers. He was a man of considerable experience as a pilot in the unsettled regions.

They brought with them all kinds of live stock, and probably a very complete outfit. With the large number of men, in all one hundred and sixty, the three ships can hardly have carried provisions and fodder for more than a few weeks.

It is clear, therefore, that this expedition was not so mobile as previous ones, which carried no live stock and only a small amount of stores; it would naturally proceed in stages, establishing a base at the first point found suitable for that purpose.

Divergences in opinion between the different partners of this large undertaking would easily break it up, and quarrels might arise which would prevent a unity of purpose. We can thus understand why the expedition, although under an able and experienced leader, did not reach as far as previous ones under Leif and Thorvald, and why it finally abandoned its project altogether.

The expedition started from a point on the Greenland coast north of the Western Settlement, probably in lat. 64°, and after a few days the high, mountainous coast of northern Labrador was sighted. They called this land Helluland. They continued southeastward along the coast as far as Nain, or perhaps a little farther south, sailed inside the outer islands, and went ashore. They found the land wooded and called it Markland. Thereafter they sailed southeastward along the coast, round Cape Harrison, and into the deep bay, or indentation of the coast, off Hamilton Inlet. They sailed past the low, sandy Porcupine Strand and into Sandwich Bay. Perhaps Earl Island was their Straumey, for round this island the tides are strong. It is on the channel between Earl Island and the mainland that Cartwright Harbor is now situated. In any case, we shall here assume that Sandwich Bay was Straumfiord. This bay, with its wealth of fish, birds, and other animals, its good pastures and dense woods, must have appeared extremely attractive to the explorers, who decided to remain there during the winter.

Already in December, however, the bay froze over, and the winter soon set in with an unexpected severity, for which the Norsemen were not prepared. The fishing failed, and towards spring the little colony was in a very exhausted condition. Thorhall Hunter was much dissatisfied; he and probably others were disappointed at not having reached the promised land of wine. The ice did not break up on the coast till late in June, when the Norsemen were so lucky as to find a whale that had drifted ashore on one of the outer islands. Soon the ice broke up completely, fishing recommenced, and they had thereafter no lack of provisions. Thorhall now sailed away with one of the ships, wishing to return to Greenland. He sailed out of the bay and commenced to beat northwestward past Cape Harrison, but he met heavy westerly gales and was driven out to sea and lost.

Karlsefni sailed southward along the Labrador coast as far as the Strait of Belle Isle, and this part of the coast he called Furdustrands. He crossed the Strait of Belle Isle, rounded Cape Bauld, and sailed down along the east coast of Le Petit Nord peninsula to Sop's Arm, or perhaps across White Bay to one of the inlets on Notre Dame Bay, or even further east. He settled there for the winter and built log houses. He called the place Hóp. The name Kjalarness was given to Cape Bauld.

The explorers had not been long at Hóp before the natives appeared, probably Red Indians. They were friendly but timid, and soon paddled away in their canoes. During the winter Karlsefni had his men fell trees and hew timber, and the timber was laid on the rocks to dry. Early in the spring the Indians came back, according to *ER* in their boats, but according to *GÞ* out of the woods. They brought with them

various skins, which they sold to the Norsemen for red cloth and milk. Karlsefni's bull frightened the natives, who tried to escape into the houses when the bull chased them, but Karlsefni ordered the doors to be barred, as he did not want to have the Indians enter the houses. While the bartering was going on, it happened that one of the natives tried to steal weapons from the Norsemen, who thereupon killed him. The natives fled, but Karlsefni had a strong fence of palisades put up round the houses, and everything was made ready for defence.

At the end of three weeks the Indians returned in much greater numbers. This time they came shouting their war-cries, leaving no doubt of their intentions. After a severe fight, the Indians were beaten off, but the Norsemen had suffered great losses. Karlsefni, seeing that it would be impossible for the Norsemen to hold their own against the much more numerous natives, decided to leave at once. He sailed northward shortly after and arrived safely in Straumfiord.

In the hope of finding another more suitable and safer place of settlement, Karlsefni soon after sailed southward again, this time with only one ship. He sailed through the Strait of Belle Isle, and down along the western, densely wooded coast of Le Petit Nord as far as Bonne Bay or Humber River. They lay to at the southern bank of a river, and here were attacked by an Indian, who killed one of their men with an arrow. They saw here a mountain range which they believed to be the same as that which they had seen from Hóp. Karlsefni, not feeling safe from further attacks of the Indians, who had by this time evidently been aroused all over the land, decided to go back to Straumfiord. He arrived there

at the end of the summer, and they now spent their third winter in the new land. During this winter the good relations between the different crews were disturbed by quarrels which arose over the women. Exactly what took place is not known, but probably there was fighting of a serious nature, perhaps even murderous assaults, as described in *Gþ*. There was now, at the end of the winter, such discouragement that Karlsefni gave up further thought of permanent settlement and the expedition sailed back to Greenland. On the way up along the Labrador coast, in Markland, they found some Eskimos. They caught two Eskimo boys and brought them to Greenland. It appears that Bjarni Grimolfsson did not, however, reach Greenland, but was driven over to Ireland, where the ship was lost.

Summing up, it will be seen that there are at least two distinct chapters in the history of the Vinland voyages. The first, related chiefly in *Grænlendinga þáttr*, tells of the accidental discovery of America, followed by exploring expeditions penetrating far to the south, probably as far as the coast of Massachusetts. The second chapter, related chiefly in the *Saga of Eric the Red*, tells of a large expedition, fitted out for the purpose of settling in America, but which did not reach farther south than Newfoundland, and which failed in its main purpose, partly due to attacks by the natives, partly owing to internal strife. It is possible that a third, unrecorded chapter exists, which would tell of occasional expeditions to the coasts of Labrador for the purpose of obtaining timber and for trading with the natives, with whom perhaps an intimate intercourse took place. The fact that such intercourse was prohibited by the Church may account for the suppression of the reports of these expeditions. Finally, a fourth and

VII. North Atlantic

unwritten chapter may exist, comprising the story of the ultimate fusion of the Norse colony with the Eskimos in Greenland and the migration of the resulting mixed tribes to the Arctic continent of America. It remains for future students of this problem to unveil the facts of the last two chapters.

APPENDIX & BIBLIOGRAPHY

APPENDIX

KNATTLEIKR AND LACROSSE

The Norsemen were very fond of athletics in the widest sense of this word, and ball games were among their favorite pastimes. The most popular game was "knattleikr," to which we find numerous references in the sagas. In Iceland this game seems to have been played from the time of the settlement of the country, and was no doubt brought there from Norway, where many geographical names bear witness to the antiquity of ball games.

Professor Ebbe Hertzberg has written an essay on the "Old Ball Games of the Norsemen,"* in which he compares knattleikr with the game of lacrosse, which has come to us through the Canadian Indians. This comparison he thinks establishes a strong resemblance, almost an identity, between the main features of the two games. Hertzberg concludes as probable that there must exist a close, historic relation between them, or, to speak more plainly, that an importation of knattleikr must have taken place from the Norsemen to the Indian tribes of the northeastern coasts of America, and from there farther inland.

This view, however, has met with categorical opposition in a treatise by Magister Björn Bjarnason,† who maintains that there is no safe basis on which to establish a relationship between the two games, since they differ in essential features.

The difficulty in deciding the question is due to the fact that, although knattleikr is frequently mentioned in the Icelandic sagas, it is nowhere described in a connected and detailed manner. The rules can only be inferred with more or less uncertainty from the incidental mention of episodes in the game. The conception of knattleikr formed by Hertzberg and Bjarnason, although in the case of both writers resulting from a careful study of the historic sources, differs in important points. In order to form an independent opinion, a comparison is here made of the description of knattleikr given by the two writers. The material is arranged in tabular form so as to bring out clearly the points of agreement and disagreement. The points on which the two writers agree are then used as a basis for a comparison with lacrosse, and the points of difference are discussed.

* *Historiske Skrifter tilegnede Prof. Dr. Ludwig Daae*, Kristiania, 1904.
† *Nordboernes Legemlige Uddannelse i Oldtiden*, Copenhagen, 1905.

DESCRIPTION OF KNATTLEIKR

Points of Essential Agreement

HERTZBERG	BJARNASON
1. The playground was flat and of considerable extent; in Iceland it was generally on the ice, but sometimes in a field. Goals, or at least boundaries, were marked off.	1. The playground was preferably on a frozen lake or fiord; it should be even and hard, conditions which were nowhere better satisfied than on the ice. When no ice was found, the play took place on a field. Boundaries or goals were marked off.
2. There were two teams opposed to each other.	2. There were two teams opposed to each other.
3. At least on certain occasions a referee (*fyrirmaðr*) was selected. It was his duty to see that the rules of the game were observed, and to decide all points of dispute.	3. A referee was selected, who should supervise the game, prevent violence, etc. It was his duty to determine the boundaries of the playground, to divide the players into teams, and to match the individual players of the two teams against each other.
4. Every player was matched against a certain player of the other side, of as nearly equal strength and agility as possible. The players so matched were special opponents during the whole game. This division in pairs of opponents of nearly equal strength (*skipta jafnliga*) was, indeed, the main principle on which the whole game rested, and which gave to it its peculiar saga-like character. In the contest between any player and his special opponent, in order to keep or to get the ball, none of the other players had a right to interfere.	4. The game was carried on in pairs. It was essential that the players of each pair should not be too unequal in strength and agility. The players so matched were special opponents during the whole game. Thus the game was a rather simple contest of strength between two men, which was not interfered with by others.

5. The object of the game was to carry the ball across the boundary or through the goal of the opponent (*bera út knöttinn*). After the ball was put in play, the players tried to catch it, and then to carry or throw it through the goal, but in this each player was hindered by his special opponent.

5. The game was won when one side succeeded in getting the ball through the opponent's goal. If the ball went beyond one of the boundaries (goals), the loser had to fetch it.

6. Knattleikr was played with great violence. It often led to lasting animosities and, directly or indirectly, to manslaughter. The game was essentially a test of strength. The bat or racket was often used as a weapon with which to strike an opponent.

6. The result depended chiefly on strength. Hard throwing of the ball and fast running were required. Wrestling was a prominent feature of the game. It was the immediate object of the players, by pushing, tackling, and other direct means, to keep their opponents away from the ball. The bat was often used in anger to strike an opponent, and even the ball at times served as a missile. The game, in fact, often became extremely violent; serious accidents, and even loss of life, were not infrequent occurrences.

Points of Partial or Doubtful Agreement

HERTZBERG

7. The two players of each pair were placed quite close to each other. Both teams together filled the field and were scattered in pairs over it.

BJARNASON

7. The players of the two teams stood on opposite sides of the field; all who belonged to the same team stood on the same side. There must have been a good distance between the different pairs of players. Player A, who had the ball, placed himself at one of the goals; his opponent B stood facing him inside the opposite boundary but at a great distance from it, so that there would

be a chance for a race for the ball between the two players, in case B did not succeed in catching it. Relatively, then, the two players of a pair must have stood rather close together.

Points of Disagreement

HERTZBERG	BJARNASON
8. There was but one ball for all the players. The ball was rather heavy, probably of wood.	8. Each pair of players had one ball in common. The balls were hard, probably of solid wood, and not more than three inches in diameter.
9. Each of the players had his bat or racket (crosse), which was suitable both for hitting and perhaps for catching and carrying the ball. It was, therefore, broad-leaved and scoop-shaped, and perhaps, in case of one type, provided with network. It was of light construction.	9. Each pair of players had one bat in common, the possession of which alternated between them. The bat was used both for driving and receiving the ball. Probably it was somewhat heavier at one end, to give it more force when striking the ball.
10. In the contest between a player and his special opponent none of the other players had a right to interfere directly. Probably, however, a player might, if he found it expedient, pass the ball over to another of his team-mates, who would then in his turn be obstructed and prevented from getting hold of it by his special opponent. When a player was trying to carry the ball out, he would be followed both by the opponent and his team-mates and by his own team-mates, who were	10. No combined play or teamwork whatever took place; it was entirely a two-men's game. The game between any two players did not end till one of them got the ball through the goal. Never was a third man seen to take possession of the ball when it dropped from or was thrown away by one of two wrestling opponents; it lay untouched until one of the players had fallen and the other ran up to it in order to drive it out. Thus the game came to resemble a fight between two

always ready to take the ball, if he should be forced to let it go.

In exceptional cases two players were matched against one of superior strength.

armies, where each soldier had his special opponent. That side which had the greatest number of winners was the victor. As in a battle, where a man after having conquered one enemy may attack another, so, also, in this game, one player might, at times, take the place of another of the same side, against a particularly strong opponent. It is not certain that all pairs played at the same time. Possibly, when there was a great number of players, they proceeded as in wrestling matches, where one or a few went forth at a time from each side, while the others remained as spectators during the fight. In exceptional cases two or more players might be matched against one of superior strength. Sometimes two were matched against two.

11. The ball might be:

a. Caught with the hand.

b. Caught with the bat (crosse).

c. Thrown by the bat.

d. Carried by the bat (crosse), with the intention of taking it thus through the goal.

The actions (*b*) and (*d*) require the bat to be scoop-shaped, or provided with a net, for holding the ball, in other words, somewhat like the modern crosse.

11. The ball might be:

a. Caught with the hand.

b. Struck and received by the bat when in the air (but not when on the ground).

c. Thrown by hand.

d. Driven along the ground, probably by kicking it.

Attention is here drawn to certain implements found with the Storhaugen ship at Karmöen in Norway, dating from the tenth century. To judge from

the description, published in *Bergen's Museums Aarsberetning*, 1887, by A. Lorange, some of these implements may possibly be bats for use in ball games.

We may now consider the points of essential or partial agreement which alone can be used as a basis for comparison with any other game.

That the playground was flat and hard, that there were two opposing teams, a referee, and goals or boundaries, through which, or across which, the ball was to be carried, are features common to practically all ball games, including lacrosse, and are, therefore, of minor importance. The only points of agreement that can be said to be distinctive of knattleikr are:

Point 4: That every player of one team was matched against a certain player of the same strength on the other team. That the players so matched were the special opponents of each other, with whose contest no other player had a right to interfere.

Point 7: That the two players of each pair of opponents were placed close together.

These features are so typical and rare that one may consider seriously the possibility of a connection between games in which they are found.

DESCRIPTION OF THE MODERN LACROSSE

In lacrosse we find all the players, excepting the goal-keeper, stationed in pairs of opponents all around the field, one member of each pair with the special duty of defending his own goal, the other with the duty of attacking his opponents' goal. Each pair of opponents, who are always trying to "check" each other, are both selected with due regard to the special duties of the post, and although one may be more specially adapted for attack, the other for defence, in this highly refined modern game, still

Modern Lacrosse Stick

they must, speaking broadly, possess nearly the same qualities of strength, dexterity in handling the crosse, rapidity of action, etc. We shall now give a brief abstract of the rules of American lacrosse, with some remarks.

The crosse may be of any length to suit the player, but shall not exceed one foot in width. It is woven with catgut in such a way that it is

possible to carry the ball in the crosse, as well as to throw it and to catch it. The usual length of the stick is about four feet.

There is but one ball, which is of india-rubber sponge, about two and one-half inches in diameter.

Each goal consists of two poles six feet apart, and six feet high from the ground, joined by a rigid cross bar. The goals are from one hundred and ten to one hundred and twenty-five yards apart. The goal crease is a marked rectangle eighteen by twelve feet, in the middle of which the goal is placed. Each of the two teams consists of twelve players, designated according to their functions and positions on the field: "Goal-Keeper," who defends the goal; "Point," first man from goal; "Cover Point," in front of point; "First, Second, and Third Defence;" "Centre;" "Third, Second, and First Attack;" and the players nearest the opponent's goal, who are called "Outside Home" and "Inside Home."

Each team has a Field Captain, who may or may not be a player in the match. The Field Captains define the bounds of the playing field; they are the representatives of their respective teams in all disputes and have various other duties.

In general the Referee must not be a member of either of the contending clubs; he controls the game and decides all disputed points, or matters of appeal, that may arise during the match, and his decision is final.

There are two Umpires, one at each goal. They are, like the Referee, disinterested parties, and their duty is to decide whether or not the ball has passed through the goal, when a score is claimed. The Umpires cannot be removed except by order of the Referee.

The game is started in the centre of the field by the Referee placing the ball between and touching the reverse surfaces of the crosses of the players "facing," and when both sides are ready the Referee calls "play." This process of starting the ball is called "facing," and is performed by the Centres.

A "goal" is made by putting the ball through the goal from the front side.

A match consists of two thirty-five minute halves, with an intermission of ten minutes between the halves, and the side scoring the greater number of goals is declared the winner.

A player is not allowed to hold an opponent's crosse with his hands, arms, or between his legs; nor to hold, strike, or trip him with his crosse

or in any other way. It is not allowable to touch the ball with the hands, except under certain specified conditions.

No player except the goal-keeper is allowed to stand within the goal

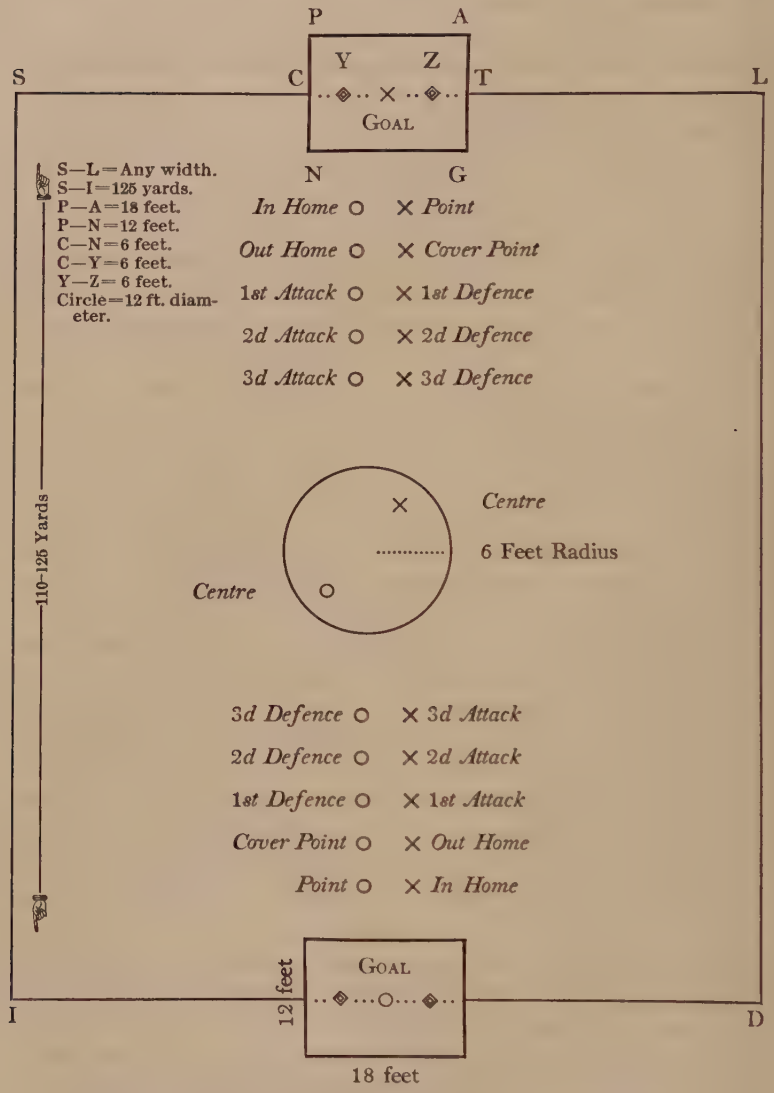


Diagram of Lacrosse Field. American Lacrosse Rules

crease, and no player shall check the goal-keeper while the latter is within the bounds of the goal crease.

No player is allowed to interfere in any way with another player who is in pursuit of an opponent. This rule accords well with point 4 of knattleikr.

It is not allowable to check an opponent's crosse, or to attempt to knock the same out of his hands in any way, unless both players are contending for the ball.

No player must deliberately strike another with his crosse or otherwise.

Comparing this game with knattleikr, it will be seen that the chief characteristics (points 4 and 7) known to have been found in the latter with tolerable certainty are actually found in lacrosse; only it appears that the players in lacrosse are more restricted to a certain part of the field, or to a certain function or duty, than to a certain opponent.

In lacrosse a player is not limited to checking his special opponent. An attacking player will try to break away from his "checker," while a player on the defence will generally keep his position, but may check any of the other opponents that has broken away. Thus players of different pairs may come into direct conflict with one another. We find here essential agreement with Hertzberg's conception of knattleikr (point 10), while Bjarnason does not admit that any kind of team-work took place in the Icelandic game.

In lacrosse there is only one ball, and each player is provided with a stick (crosse), in which respects, again, we find agreement with knattleikr according to Hertzberg, but not according to Bjarnason (points 8 and 9).

Bjarnason maintains that each pair of players in knattleikr was provided with a ball; if there were several pairs of players, there would be several balls. But it appears that such an arrangement would inevitably lead to confusion, the balls would fly round among the different pairs, who, according to Bjarnason, had nothing whatever to do with one another, and who would thus get in one another's way. The assumption of Hertzberg that there was only one ball, however great the number of players, seems far more probable, and is supported by the fact that in the sagas the ball is always spoken of in the singular.

In order to establish a connection, or the probability of a connection, between knattleikr and lacrosse, it is necessary, however, to go one step farther than has been done by Professor Hertzberg. If the points of sim-

ilarity found to exist between the two games are due to a real relationship, and are not accidental, the same features must be found in the old Indian games from which lacrosse is known to have been derived. Hertzberg has taken for granted, without giving any proof of this point, that lacrosse is identical in its characteristics with the Indian games, but this is hardly permissible before it is confirmed by a careful study of the latter. If the assumption is found invalid, the chain of connection between knattleikr and lacrosse is broken. It seems, in fact, quite conceivable that modern lacrosse may have developed independently certain features which were not found in the Indian games, but which happened to be found in the old Norse game. Such points of resemblance may be explained by a like desire having existed in both cases to secure a good and rational game.

Hence it is necessary to study the Indian games, to compare them with knattleikr and lacrosse, and in particular to show that the Indian games actually comprise the essential features common to both, in which case alone they can be supposed to form the connecting link between the two.

LACROSSE AS PLAYED BY THE INDIANS

The most complete treatise on Indian ball games is found in the work of Mr. Stewart Culin, "Games of the North American Indians,"* which gives a very comprehensive and complete *résumé* of all that has come to light on this subject. In the opinion of some,† lacrosse is but a modification of the "soule" of the Ardennes mountaineers in France, brought to Canada by the first French colonists. Eugène Beauvois‡ believes that the game was brought there by the early settlers from Normandy. Culin, who is probably better able to judge about this question than any one else, maintains, however, that, although the Indian game of racket or lacrosse may have been modified in historic times, it remains an aboriginal invention.

A study of Culin's work reveals the following facts:

A ball game, similar to the Canadian lacrosse, referred to by Culin as "racket," is played by Indians over a great part of the continent. It is, however, according to Culin, confined to the Algonkian and Iroquoian

* *Twenty-fourth Annual Report of the Bureau of Ethnology*, Washington, 1902–03.

† See Sylva Capin, *Dictionnaire Canadien-Français*, Boston, 1894.

‡ *Journal de la Société des Américanistes de Paris*, 1905.

tribes of the Atlantic seaboard and the region of the Great Lakes; and to their neighbors, the Dakotas, on the west, and the Muskhogean tribes of the South. It occurs again among the Chinook and the Salish in the northwest, and in a limited area in California. It is not recorded in the southwest.

The game may be divided into two principal classes: first, those in which a single racket or bat is used; second, those in which two rackets are employed by each player. The latter is peculiar to the southern tribes, among whom the single racket is not recorded. We shall here describe only the game as played by the northern and in particular the northeastern tribes, where each player used a single racket (crosse).

The games were played on a flat, open field or prairie. Goals were erected at the extremities of the field, generally consisting of two sets of posts or poles, between which the ball had to be driven. The goals were a good distance apart, sometimes as much as one-third of a mile, depending on the number of players. The game was generally played with some kind of racket, the most common form being that indicated on the accompanying sketch; consisting of a stick about three feet long, shaved thinner at

Stick used by the Menominee Indians, Wisconsin. Bur. Ethn., XIV
W. J. Hoffman

one end, and bent into a hoop or ring at least some four inches in diameter. Across this hoop a network of four or five thongs was formed. This network was not drawn taut, but formed a netted pocket, in which the ball might rest when caught, and in which it might be carried while the player was running along the field, permitting, however, the player to throw the ball, by means of the racket, to a very great distance. The construction of the racket varied somewhat in different sections of the country. The ball was generally not more than three inches in diameter, but hard and heavy, made of thongs of buckskin or leather stuffed with hair; sometimes, however, it was of wood.

The number of players taking part in a game varied from twelve to sixteen with some tribes, to several hundred in other tribes; generally the number was very great. Often some old men were selected as judges

or managers, who had to see that the rules were obeyed. Generally each party had a leader or captain, who selected the players of the respective teams.

The ball games were favorite opportunities for betting, especially among the women.

The game was often extremely violent, and serious accidents were common. In the ancient form of the game the players were permitted to trip, throw, hold, and to run at full speed against any antagonist, resulting in rough and fierce physical contests. Still, as observed repeatedly by the various writers on this subject, it was seldom that any ill-feeling was exhibited, and the games seldom led to quarrels of any kind.

We shall now give a few extracts from some of the best descriptions of the Indian ball games as played by the northern tribes, exhibiting various particulars which may or may not have been general among other tribes. Those descriptions are specially selected which contain features characteristic of knattleikr.

The extracts are practically literal, and only such passages are omitted as have no bearing on the present discussion, or have already been included in the introductory remarks.

"IROQUOIS GAME OF LACROSSE"*

The present Canadian Iroquois, like the New York Iroquois, have lost most of their customs and usages, and much even of what remains is warped and disfigured by contact with transatlantic manners and cast of thought.

The modern lacrosse, as played by the so-called teams, is an adaptation of the ancient, perhaps proethnic, mode of playing the game by the Iroquois and northern tribes generally. In its primitive form the game was played by two parties of paired players of equal numbers, who were provided with the netted ball clubs to be found in collections of Iroquois antiquities.

The goals or butts for the ball game were marked by poles or stakes from ten to fifteen feet in length, two in number, driven in the ground from five to fifteen paces apart. The goals were placed from forty to eighty rods (two hundred to four hundred and fifty yards) apart, according to the number and skill of the players.

In order to make a point in the game, it was necessary to throw or to

* J. N. B. Hewitt, *The American Anthropologist*, 1892, V, 189.

carry the ball into the goal. The number of points required to win was not fixed, but at the beginning of every game a certain number was decided upon by the two parties; three points out of five was the usual number, but four out of seven, five out of nine, etc., were sometimes adopted.

Many accidents occurred, and sometimes a player was killed in the terrific struggles for possession of the ball, in which, occasionally, all the players joined in one rolling throng.

The players to begin the game assembled on the ball ground at a point midway between the goals or butts. The two parties were then divided into couples, every player being paired with one of the opposite party, those paired being as nearly as possible of equal skill, agility, strength, and fleetness of foot. One of the players was placed immediately in front of the goal defended by his side, and another in front of the opposite goal. These two were called the door guards. It was their duty to guard the goals against an opposing player who might attempt to throw the ball through from a distance, or to carry the ball into the goal on his bat. These two were chosen rather for their skill and vigilance than for swiftness.

It was considered a great feat for a player to take the ball on his bat, elude his pursuers and opponents, outplay the door guard, and thus carry the ball into the goal, especially if he was able to walk into the goal.

The game was opened by the two captains holding their clubs crossed in the form of a maltese cross with the ball placed midway between the ends of the network on each club; then by a steady push each captain endeavored to throw the ball in the direction of the goal to which his side must bear it.

The Iroquois prefer the ancient to the modern style of the game, for in the former they have a greater opportunity to exhibit their skill, strength, and fleetness of foot individually, whereas in the modernized form of the game there is more team-play.

GAME OF THE SENECA TRIBE, NEW YORK*

The Iroquois ball game played by this tribe, as described by Morgan, is similar to that described by Hewitt. A few additional remarks are of interest.

The band of players was select, usually only from six to eight on each side. If a player became fatigued or disabled, he was allowed to leave

* Lewis H. Morgan, Cramoisy Press, New York, 1859.

the ranks, and his party supplied his place with a fresh player. One rule forbade the players to touch the ball with hand or foot. The contest between the players was, which set would first carry the ball through its own goal a certain number of times. The players, after being divided into two companies, stationed themselves in two parallel rows, facing each other, midway on the line, between the goals, each one holding a racket, with which alone the ball was to be driven. As soon as all the preliminaries were adjusted, the ball was dropped between the two files of players, and taken between the rackets of the two who stood in the middle of each file, opposite each other. After a brief struggle between them, in which each player endeavored, with his racket, to get possession of the ball and give it the first impulse towards his own goal, it was thrown out, and then the pursuit commenced. The flying ball, when overtaken, was immediately surrounded by a group of players, each one striving to extricate it and at the same time direct it towards his party goal. In this way the ball was frequently imprisoned in different parts of the field, and an animated contest maintained for its possession. When freed, it was knocked upon the ground or through the air; but the moment a chance presented itself, it was taken up upon the network of the racket by a player in full career, and carried in a race towards the goal. To guard against this contingency, some players took up detached positions suitable for intercepting runners who had got possession of the ball. If such a runner found it impossible to elude his adversary, who came in before him on a diagonal line, he turned about, and threw the ball towards his goal, or, perhaps, towards a player of his own party, if

Stick used by the Seneca Indians, New York. Bur. Ethn., XIV
Lewis H. Morgan

there were adverse players between him and the goal. In ancient times they used a solid ball of knot. The bat also was made without network, having a solid and curving head. At a subsequent day they substituted a deerskin ball and the network bat or racket in present use. These substitutions were made so many years ago that the date is lost.

BALL GAME OF THE MENOMINEE INDIANS, WISCONSIN*

When any one prepares for a game of ball, he selects the captains or leaders of the two sides who are to compete. Four innings are played. The racket, or "ball stick," is quite similar to that described above.

When the ball is caught in the ball stick, the player, running along with it, carries the stick almost horizontal before him, moving it rapidly from side to side and at the same time turning the stick so as to keep the ball always in front and retained by the pocket. This constant swinging and twisting movement tends to prevent players of the opposing side from knocking the ball out, or dislodging it by hitting the stick. The game is like that of the Ojibwa of northern Minnesota, which has previously† been described as follows:

After selecting a level piece of ground, the goals are erected about one-third of a mile apart. These consist of two upright poles about twenty feet high. The best players of either side gather at the centre of the ground. The poorer players arrange themselves around their respective goals, while the heaviest in weight scatter across the field between the starting-point and the goals.

The ball is tossed into the air in the centre of the field. As soon as it descends it is caught with the ball stick by one of the players, when he immediately sets out at full speed towards the opposite goal. If too closely pursued, or if intercepted by an opponent, he throws the ball in the direction of one of his own side, who takes up the race.

The usual method of depriving a player of the ball is to strike the handle of the ball stick so as to dislodge the ball. Frequently the ball carrier is disabled by being struck across the arm or leg, thus compelling his retirement. Severe injuries occur only when there is ill-feeling or when the stakes are very high.

Should the ball carrier of one side reach the opposite goal, it is necessary for him to throw the ball so that it touches the post. This is always a difficult matter because the post is guarded by numerous players. The ball may be intercepted and thrown back into the field. The game may come to a close at the end of any inning by mutual agreement of the players, that side winning the greater number of scores being declared victor.

*W. J. Hoffman, *Fourteenth Annual Report of the Bureau of Ethnology*, Washington, 1896.

†W. J. Hoffman, *Remarks on Ojibwa Ball Play, The American Anthropologist*, vol. iii, 1890.

The game played by the Dakota Indians of the upper Missouri was probably learned from the Ojibwa; the ball sticks are identical in construction, and the game is played in the same manner. The goals sometimes consist of two heaps of blankets.

The game of lacrosse originated without doubt among some one of the eastern Algonkian tribes, possibly in the valley of St. Lawrence River, and from there it was carried down among the Huron-Iroquois, and later on into the country of the more southern members of the Iroquoian linguistic stock, as the Cherokee, etc. Westward the game was taken by the various tribes of the Algonkian stock, and afterwards adopted by other tribes, until at this day there is evidence of its influence among many tribes of diverse stock.

The ball game is closely connected with the religious ceremonies of the Indians, as explained by Dr. Hoffman under the heading, "Ceremonies of Mitawit or Medicine Society." A full description is given of the mythical origin of the game, of which the following passage is of particular interest: "At one end of this clearing was a knoll, which was taken possession of by the bear chiefs, from which point they could watch the progress of the game. Then the Anamaqkiu placed themselves on one side of the ball ground, while the Thunderers took the other, each of the latter selecting a player from among their opponents, as the players always go by pairs."

COMPARISON BETWEEN KNATTLEIKR AND LACROSSE AS PLAYED BY THE INDIANS

In both games we find a flat playground, two goals or boundaries, two opposing teams, and referees. In both games the object was to carry the ball through a goal or across a boundary. Moreover, we find in the game of the Iroquois, as described by Hewitt, that every player was paired with one of the opposite party, those paired being, as nearly as possible, of equal strength, agility, etc., just as in knattleikr. In Hoffman's description of the mythical origin of the game, this pairing of the players is again alluded to. This feature, indeed, is not known to have been mentioned by other observers of the Indian game, but their descriptions are generally far less complete than that of Hewitt, and the pairing may have escaped their attention.

The remark of Hewitt, that the Iroquois prefer the ancient style of game, where they have greater opportunity for individual play, that is, less team-

work, seems to indicate that formerly the paired players remained to a greater extent throughout the game, the special opponents of each other, as in knattleikr. It may thus be said that a fair correspondence is found to exist between the two games in respect to all those points of knattleikr (1-6) which are well established.

It is not clear from the descriptions whether the players of each pair in the Indian game were placed close to each other, but as this characteristic feature is found in modern lacrosse, which is manifestly derived from the Indian game, we may suppose that it was found also in this latter.

The fact that both the Indian and Icelandic games were played with great violence was a natural consequence of the temperament and the state of civilization of the two peoples, and does not imply any connection between the games.

We shall now deal with those points in knattleikr about which opinions differ.

If the assumption of Hertzberg is correct, that only one ball was used in knattleikr, we find also on this point correspondence with the Indian game. Hertzberg suggests that the Norsemen used a scoop-shaped bat or stick, suitable for carrying the ball, and that perhaps in some cases they used rackets or crosses somewhat like those used by the Indians. The evidence in favor of this theory is, however, incomplete, although the term *knattgildra* for the bat, used in one place in the sagas, points in this direction. *Knattgildra* means a contrivance with which to catch (*gildra*) the ball. This question does not, however, seem vital to Hertzberg's arguments, since we may easily conceive the bat to have been gradually developed into a racket or crosse, as, indeed, is said by Morgan to have been the case among the Senecas.

We have seen that in the Indian game a player, running with the ball, would in an emergency pass the ball to one of his team-mates. This corresponds with knattleikr as explained by Hertzberg, while Bjarnason maintains that no such interaction between the different players of the same team took place, the game being strictly a two-men's game.

It appears to us that Hertzberg's explanation is the more plausible. It seems unlikely that the game should have consisted of an incoherent aggregation of two-men's games, by which mutual disturbance and conflict would seem unavoidable, leading ultimately to complete confusion. Coöperation, that is, team-work, must have existed to some extent.

It seems natural to suppose that the game was originally a two-men's

game, pure and simple, which gradually developed to greater complexity by drawing in more and more subsidiary or assistant players, arranged in pairs over the field; all coöperating to the common end, to get the ball through a goal or over a boundary, but never interfering directly with the individual contests which might take place between the players of any one pair.

The Greenland Eskimos, when found by Hans Egede* in the first half of the eighteenth century, played a ball game which possessed the chief characteristic of knattleikr, that the players of opposite parties were paired, and from the drawing, here reproduced, which accompanies Egede's description of the game, it is apparent that the two members of each pair were placed side by side ready to tackle each other. No bat was used by the Eskimos. Egede says: "The ball game is their favorite sport, especially by moonlight. . . . When they are divided into two sides, one player throws the ball to another of his own side. The players of the other side try to take the ball from them, and thus the game alternates between them."

If this game is actually due to Norse influence, it shows at least that the Norsemen were not unwilling to have the natives learn and adopt their games.

Summing up, it must be admitted that there are remarkable points of likeness between the Icelandic and the Indian games. The most characteristic feature of knattleikr, a pairing of opponents of equal strength, is known to have been found in the Iroquois game, and perhaps also in the game of certain other tribes. It seems probable that in the Indian game, as in knattleikr, the paired players were placed close together, and that they acted as the special opponents of each other throughout the game. Differences undoubtedly exist, notably in the implements used in the games, but it seems likely that the Indian game, if derived from knattleikr, would in course of time be changed and developed to suit the taste and temperament of the Indians and to conform to the conditions under which it was played. On the whole, the evidence brought to light by a study of these games favors the theory that lacrosse came to the Indians through the Norsemen, but we find nothing in the sagas to show that such frequent and intimate intercourse, which this theory presupposes, took place between the two peoples. If, then, we are to accept this theory, we must admit, as suggested at the end of the foregoing discussion, that a

* *Det Gamle Grönlands Nye Pelurstration*, Copenhagen, 1741.

Egede's Picture of Greenland Eskimos Playing Ball

blank chapter exists in the history of the Norse Greenlanders. The facts which have so far come to light concerning these games, although interesting and remarkable, stand isolated and unexplained, and must, therefore, await further elucidation before we can assert that a connection exists between knattleikr and lacrosse.

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